EDUCATIONAL METHOD

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THE PLACE OF SCIENTIFIC RESEARCH IN THE NEW EDUCATION

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A casual survey of the multiplicity of books on our library shelves dealing with the problems of education might make even the most fearless hesitate to attempt to add to the storehouse of information already at hand. Philosophy of education, methods of instruction, curriculum, and administration—all have had a generous share of attention from those who have had a message to give. Even if we presume to enter the field of "new education," we are in danger of having it pointed out that somewhere in the dim past or in more recent times some one has already expressed ideas and principles which we fondly believed were original with us. Two thousand years ago Plato emphasized the importance of the individual and of individual differences. He proposed tests to determine mental alertness and urged that the results of these tests should be factors in vocational guidance and placement. Today we are building up a science of detecting and analyzing those individual differences, to the greater welfare of the individual and of society. In the seventeenth century Comenius advocated the doctrine of self-activity in the early years of childhood, and a century later Rousseau, Pestalozzi, and Froebel, each with his own peculiar approach to the problem, sowed the seeds of thought with reference to child experience, self-expression, and natural rather than superimposed development. Today we are cultivating the soil which they prepared, watching and encouraging the growth of the seed which they planted, crossing and re-crossing our products in order to reap a more perfect harvest.

The "new education" has a right to use all that has gone before for all it is worth. It has selected from the philosophies of the ages that which seems to be best and has added those principles and ideals which reach further toward the realization of complete living. It has selected its materials and its methods in the light of its goals, trusting thereby to achieve the results so keenly desired. It strives to meet the physical, social, and spiritual needs of the world in which we live by meeting the physical, social, and spiritual needs of the little child. Wholesome living, physical fitness, intellectual competency, personal contentment, efficiency of service, social contribution, and spiritual satisfaction—these are the ideals of its program.

In keeping with such ideals it moulds its curriculum and chooses from the inheritance of the ages the music, art, literature, and science that may vitalize and enrich the child's experience, inspire his imagination, and guide his activity. It places its emphasis upon education as life itself, upon the school as a miniature social community which has its immediate as well as its remote values; above all, it chooses its method and grants to the child a freedom in self-expression and creative activity that is beyond anything which the schools of the past have attempted to do.

Let us grant that it is the task of educational philosophy to set the ultimate goals toward which our schools should move. Let us accept the ideal of complete living as our final objective. Let us also grant that complete living involves physical, intellectual, social, and spiritual happiness and efficiency. Yet, in the "new education" as well as in the "old," we come face to face with the problem of evaluating the means whereby we may attain the goal. What constitutes intellectual fitness? What is social efficiency? What is spiritual happiness? How can we analyze these factors? How can we best realize their values? What materials and what methods shall be used to attain them? Will the methods we propose produce the desired results?

Educational philosophy can never answer for us such questions as these. We may indeed have personal judgment; we may even have profound convictions. Yet neither personal judgment nor profound conviction availed to make the earth flat or to make the sun a moving body at the time when such ideas were popular. The astronomer predicts the return of Halley's comet only upon the basis of scientific data and mathematical calculations. The physician predicts the action of certain medicines on the basis of experimentation. The chemist predicts that water will be produced by the combination of specific proportions of hydrogen and oxygen, because he has tried it over and over again, always with the same result. In no one of these situations could personal judgment produce a scientific fact. Personal judgment stands at the gateway of experimentation and research. Not until it is willing to enter and pass through the test of scientific evaluation can it stand unchallenged and above dispute.

Science stands for just such experimentation and research; its goal is prediction. Wherever its services can be turned toward the solution of a knotty problem, we may well afford to use them to the utmost. Physics, chemistry, astronomy, zoology, physiology—all the physical and biological sciences have long served as examples of what can be done to increase our fund of knowledge of the universe. During the past fifty years psychology has taken its place in the group with true scientific procedure. Even more recently there has been born the youngest of all sciences—the science of education, designed not to replace educational philosophy but to work hand in hand with it, helping to point the sure way to the goal.

Is the educator as ready to submit his tenets to the rigid scrutiny of scientific research as are the physicist and the chemist? He is no more proof against error than they. We may safely say that neither recency nor antiquity of an educational philosophy or practice is a valid criterion of its soundness nor a valid safeguard against possible insidious effects of its use. Every new departure has its proponents and its critics. Arguments for and against are numerous. But debates and arguments do not constitute scientific research. They are too easily colored by preconceived opinion, by personal prejudice, and by deep-seated convictions. The aim of scien-

tific research is to get at the facts by methods free from personal opinion. Variable factors must be controlled and evaluated, results must be observed and recorded in such a manner that friends and foes alike may reach comparable conclusions.

The "new education" is subject to such requirements as is any other educational movement. How much more authoritative will become its principles, if it can be shown by scientific procedure that they will produce the desired results! Nor does such research conflict with the ideals for which the "new education" stands. There are difficulties in the way, to be sure. We are dealing with human values, and in so doing we find it much more difficult to control conditions for experimentation than does the physicist who studies the inanimate world. If there are products of education that, with our present facilities, cannot be measured or evaluated; if there are factors that seem to defy our present means of experimentation, then they must be frankly acknowledged and considered outside the realm of existing scientific measurement. These, however, do not prevent us from using all research methods that are available for all problems to which they may be applied. And the time may come when even that which today seems so intangible and so elusive will yield to more refined technique of measurement and to greater possibilities of prediction.

PROBLEMS IN THE NEW EDUCATION

What then are the problems in the "new education" to which scientific research may be applied? What, if any, are the fields into which scientific challenges may not enter?

Prominent and persistent among the problems of educational programs of all ages have been those growing out of (1) mental and physical differences, (2) differences in achievement, (3) differences in behavior and social adjustment, (4) differences in vocational objectives or destination. Added to these the "new education" has pushed into the foreground of battle (5) problems of the curriculum, (6) problems of teaching methods, and (7) problems of administration. Let us consider each of these and note briefly why scientific research is necessary if we are to keep on the safe road of educational progress.

1. *Mental and physical differences.* The fact that there are mental and physical differences among children, due to both hereditary and environmental factors, will scarcely be challenged today. Few, if any, people will contend that all children are born with equal power or capacity for development. Likewise the power that one possesses may be enhanced or hindered by emotional and physical adjustments. What is the nature of this human material with which we work? How does each child vary from that which is common? What are the strong points and what are the weak? What stress, what bending, what polish will each take with safety to himself and to society? The workman who deals successfully with material things must know the possibilities and the limitations of his iron, clay, marble, concrete, wood, or sand. He must know that each should be dealt with according to its nature.

No less must the worker with children recognize the wide variations in mental and physical powers of those with whom he deals. Science has produced tools by which these differences may be measured. We need not indulge in vague guesses and personal opinions. It will not suffice to use generalities, such as "long" or "short," "heavy" or "light," "bright" or "dull." We may employ the proper instrument of measurement and reach a conclusion which will be closely comparable

to that obtained by any other equally competent workman. It is true that some of the instruments are less accurate than others. One may "step" the distance across a field and obtain a measure differing from that reached by use of the surveyor's steel tape. Yet both have a value above guessing in that they follow a technique that can be rechecked and verified.

Measures of intellectual differences have been devised in the form of mental tests which, although still imperfect, are far better than opinions. Furthermore, they furnish a standard vocabulary, so that those discussing mental differences may talk to one another in terms that are comparable. All too frequently an identical performance of the same child has been characterized by different observers as "bright," "dull," "stupid." Such incongruity is eliminated through the use of a standard measure as provided by the mental test.

There are physical problems in the life of every individual which demand scientific research. One whose physical machinery is in maladjustment for whatever cause may be seriously handicapped in his power of achievement or in his attitude toward life. Many physical handicaps can be diagnosed and removed by science. Others not removable may be met by means of compensation.

Personality differences superimpose themselves on mental and physical powers in such a way as to complicate the end-product of any effort. Emotions are the forces in life which determine in large measure both the degree of effort expended and the direction of physical and mental activities. While personality is difficult to measure and while the present tests in this field are at best experimental, progress is being made and there is every reason to believe that time will give us tests of great value. Into the still more intangible realm of spiritual values science has scarcely made an entrance. Yet there is no reason why any human characteristic which exists in appreciable form or degree should not eventually be subject to evaluation. We need only await the development of more delicate instruments and more refined technique.

Mental and physical differences are problems common to all education, but they become preëminently the concern of the "new education" which stresses the individual and his needs. We should seek to measure each child by every means that will help us to understand, on the one hand, the nature and the extent of his variable qualities, and, on the other hand, the nature and extent of the changes which take place during growth and education. Only thus can we diagnose his difficulties, interpret his behavior, and evaluate the methods and materials that have functioned in producing the change.

2. *Differences in achievement.* What causes the wide differences in educational achievement among children of the same age, or the same class in school, or between children of the same age in different classes or in different schools? We may trace the answer to two sources: (1) hereditary or innate capacity, (2) environmental influences. The problem of differences of achievement, therefore, must be approached through the combined evaluation of heredity and environment. In the paragraphs above we have discussed the value of a scientific measure of mentality. We must parallel this with a standard measure of achievement. Probably the chief measure of teaching in all past ages has been accomplishment in classroom examinations. Some proponents of the "new education" have looked upon the examination as the dragon menacing or paralyzing all free expression of the child. Try as we may, however, we cannot divorce ourselves

from the necessity of measuring achievement and progress. The very principles upon which "new education" is built—variation in progress, pupil initiative, and pupil interest—demand that we accept standard measures of accomplishment; else the proof of our educational efficiency rests merely on the vocabulary of those who choose to speak.

3. *Problems of behavior and social adjustment.* In the past the teacher solved his serious problems of behavior and social adjustment by throwing out upon society at large the children who would not conform. He refused to retain them in school as subjects fit for education. Such a procedure is no longer tolerable. Every child is and continues to be a problem of education, whatever his behavior may be. What is it that produces good or bad behavior? The mental, physical, social, and spiritual factors all enter as possibilities. It matters little whether one has a powerful intellect or whether he has attained a high degree of educational accomplishment unless his behavior and social adjustment are satisfactory. Indeed that person who is maladjusted socially is even a greater menace to himself and to society if his mental powers and his training stand high. Education of the whole child—well-balanced development of all his powers—is the aim of "new education." That scientific research which will enable us to understand better how to bring about such equilibrium in social behavior is an essential feature of its program.

4. *Differences in vocational objectives.* The well-rounded individual seeks a vocational outlet which is commensurate with his powers and his opportunities. Differences in vocational requirements have always been major considerations in determining the type of education offered to different classifications of pupils. The "new education" is facing an increasing complexity of adjustment by reason of the multiplicity of occupations and subdivisions of occupations which have grown up with advancing civilization. Out of this demand for specific training which shall fit the child for a specific occupation has grown the necessity of job analysis, of educational training in the light of the job analysis, and of the determination of pupil interests and abilities with reference to a given job. These are essentially research problems which demand the development and use of measuring instruments that may analyze the interest and aptitudes of a pupil as well as his efficiency within a given trade. Because the "new education" stresses self-realization for every individual in every aspect of life, it must accept as part of its responsibility a research program in the field of education for vocational efficiency.

5. *Problems of the curriculum.* All the problems which have thus far been discussed are involved in the organization of the curriculum. By curriculum we mean all those activities in which the pupil is engaged in school. What shall these activities be? What subject matter shall be introduced? What shall be the sequence of the subjects included? To what extent is emphasis upon creative activity justifiable? What is the relative importance of appreciation as compared with information or technical skill? To what extent should immediate life situations, arising from the daily experience of the child, supersede the organized scheme of preparation based upon the probable demands of adult life? These are only a few of the problems which must be met by the "new education." They can be satisfactorily met only through the methods of scientific research.

6. *Problems of teaching methods.* Closely related to the curriculum is the method of presenting it—in fact, the two are al-

most inseparable. To what extent shall information be imparted? To what extent shall it be discovered by the child through laboratory experimentation? How far shall control by the teacher give way to the freedom of the child? What shall be the place of pupil initiative? of drill? of memorization? of the socialized recitation? No one will question the fact that these are paramount problems of the "new education." They represent fields of contention, in which there is today no clearly defined unanimity of opinion among educators. The only hope of solution lies in long-continued, carefully planned programs of research and experimentation.

7. *Problems of administration.* In the administration of educational systems there are numerous problems which are still in the field of controversy. Two of these will suffice to illustrate the need for further scientific research. One is the moot question of the proper size of a class, provided instruction is carried on by class means. Is there any excuse for class instruction at all? There are numerous advocates of the individual plan of instruction. Others believe that it is better to have a class of small size, and still others contend that it is even better that the class be large. Much experimentation must still be carried on before any conclusive answer can possibly be given to the contenders in these various fields. Still another contention is now prominent among educators throughout the world. This relates to the grouping of children. During the educational period, shall children be trained chiefly with their fellows of the same age, of the same sex, of the same or similar mental ability, of similar interests; or is it better that children be associated with others of widely differing ages, that the sexes be mingled, that those of high and low mental caliber be brought together, and that those of widely varying interests and talents be trained in close association? These are also disputed questions and the final answer is not yet. In all these problems, the "new education" has proposed schedules and plans of work which have been set up as better than those used in the past. These must be evaluated against alternative practices. Only scientific study will enable us to pass out of the period of fads and personal contention into the age of tested and dependable educational procedure.

MEANS OF CARRYING ON RESEARCH

With problems such as these calling for attention, what shall be the methods of attack? What means does scientific research have at its disposal to analyze and to evaluate? Four general procedures may be cited as representative of the type of work that may be done: (1) measurement, (2) statistical analysis, (3) case study, (4) experimental control. Each of these has its purpose to serve, each contributes to the total result.

1. *Measurement.* Individual differences have been discussed in previous paragraphs as applying to mental and physical traits, personality, achievement, and vocational objectives. The analysis and understanding of these individual differences have been pointed out as constituting one of the major problems confronting the "new education." As a means toward such analysis we rely upon the devices of measurement which have been developed in each field concerned. Some of these have already yielded fruit of considerable value, others are still in the experimental stage of pioneer effort. All are subject to further revision as the technique of measurement is perfected. The earliest and most widely used method of evaluating differences of accomplishment among school children has been that which is known as the classroom examination. During the

last quarter of a century, however, particularly during the last decade, a form of *achievement* test commonly known as the standardized test has been developed and widely used. By "standardized test" is meant one which is so arranged that it is given according to specific directions, as nearly as possible under the same conditions wherever and by whomever it is administered. The grading of the test is also specifically controlled by directions and standards, so that the place of subjective judgment is minimized in favor of objective scoring. Furthermore, the standardized test has been given to a sufficiently large number of children to enable us to know what degree of accomplishment should commonly be expected from pupils of a given age or grade. On the basis of such widespread testing, tables of standards or norms are prepared to assist in interpreting a given pupil's score in terms of the achievement of unselected school children. The values of such standardized tests thus lie in the fact that they offer the means of evaluating the relative achievement of pupils in a given subject without recourse to the shifting, unreliable data of personal opinion.

A second type of standardized examination is the *mental* test, developed for the purpose of measuring original endowment or general intelligence rather than achievement. The sponsors of the mental test movement believe that ability to accomplish is somewhat distinct from actual accomplishment. The former relates to that intellectual equipment which we have to work with, the latter relates to the results we secure in using the equipment we possess. In other words, the mental test may be characterized as a measure of what one *can* learn rather than a measure of what one *has* learned. It would be absurd for us to believe that these two elements can be completely separated. Those who have worked extensively with mental tests are fully aware of the fact that the results secured from them are seriously influenced by the environment and training which the child has received. Yet they can be considered indicative and, if used in conjunction with an achievement test, will furnish valuable comparative data. The average of achievement in several school subjects usually agrees very closely with the result of the mental test. If a wide difference is found, then there is need of careful analysis to determine the cause. The wisest use of mental and achievement tests is thus a mutually supplementary one, each offering basis for evaluation from a different point of view.

Both mental and achievement tests may be made to perform a valuable service in the adjustment of instruction to meet the individual needs of the pupil. Diversity of ability to progress demands variation of educational method and of standards of attainment. Each child should be given tasks that are hard enough but not too hard. A task should not be so difficult that it crushes nor so easy that it makes no challenge. Yet how shall the teacher gauge the difficulty of the work that each child may reasonably be expected to do? And how shall she know when he has fulfilled the promise of his own intelligence? Let her call to her service the standardized tests that give an index of mental ability and of achievement, and she will have an objective means of judging the results of her work.

A third field in which recent developments give some promise is that of *aptitude* testing. The aptitude test is designed to reveal some special ability which a child may possess before it has actually been developed. For example, does a child have the inherent qualities to make him a good musician, a good artist, or a good typist? Manifestly, if aptitudes can be

revealed in this way, then it will be possible to guide the child into that field in which he shows special ability and to limit his activities in other fields as much as may seem desirable in keeping with the general demands which life may make of him. Probably the most promising development of tests of this type up to the present time is to be found in music. The Seashore Tests of Musical Ability are widely known for their prognostic value.

Still another field of measurement has recently shown evidence of value. This is the analysis of *interest*. Many a person approaches the later years of adolescence or even adulthood without having a clear consciousness of the field of activity in which his greatest interest actually lies. No doubt interest and ability are closely related. Which is the cause and which is the effect has not yet been determined. Are we interested in that which we can do best? Or do we make the greatest effort and therefore succeed best in that in which we are most deeply interested? Regardless of how these questions may be answered, any test which reveals either interest or ability is of supreme value for purposes of vocational guidance. The most extensive research in this field has been carried on at Stanford University, California, where rather gratifying results have been secured in analyzing the vocational interests of college students.

In the field of industry, *trade* tests have been developed which relieve the employer of the embarrassment of hiring applicants who are distinctly unfitted for the work which they attempt to do. Such tests become a part of the educational program of our public schools only at the end of a trade course or of any segment thereof, when they furnish an indication of the student's mastery of the trade in which he has been trained.

All these devices for measuring pupil ability, pupil achievement, and pupil interest offer to proponents of the "new education" a valuable means of understanding the material with which they have to work. Whatever educational theory we adopt, in last analysis we come back to the pupil as the beginning and end of our program. Whatever can be used to help us to know him better—to analyze his abilities, his interests, and his limitations—has a definite place in school administration. The fact that the tool is still imperfect and subject to error need not deter us from using it for whatever results it can give. The wisdom and common sense of educators should be equal to the task of interpreting these results with full consideration of their fallibility.

2. *Statistical analysis.* There can be no real measurement without statistical analysis. Distributions, averages, correlations, probable errors are some of the mathematical bases for establishing the validity and reliability of measurement. The teacher in the schools may well leave to the statistical expert the responsibility of handling the most technical aspects of these problems. Yet she should understand the simpler statistical devices in order that she may the more readily and the more accurately interpret her own data. A century ago Galton concluded from his study of mental and physical differences in man that the normal distribution was the basis upon which human traits were arranged. With a central tendency or average about which a large proportion of the individuals measured are grouped, the number gradually decreases as we go up and down the scale of measurement. If the achievement, the mental ability, or any other trait that is being considered varies widely from this central tendency, then it is important to know by how much it varies, what the significance of the varia-

tion is, and what its causes are. The teacher has a valuable bit of information regarding a given pupil when she knows that he stands in the highest ten per cent or in the lowest ten per cent of that distribution which represents the scores of unselected pupils of his own age or grade. When she can further analyze his several abilities so that she has a comparable measure for each one, she has the necessary data for making a profile graph, which is a convenient device for picturing the relative strengths and weaknesses of a pupil in a number of traits.

In the experimental laboratory the more complicated aspects of statistical analysis are brought into play. The very development of the standardized tests which are used in the classroom demands months of patient labor on the part of the statistician, in order that they may actually measure the trait which they purport to measure, and that they may measure it consistently. Numerous other problems relating to the interrelationship of various traits, the association of factors which appear in the life of the child, and the prediction of results on the basis of given facts demand the attention of the expert. All these studies are made in the interests of child development, of the "new education" which makes the child the center of its program.

Such statistical analysis, however, has its limitations as well as its possibilities. It is mechanical. It has in it none of the elements of human understanding. It does not attempt to explain human motives. Yet it is the basis for better understanding and for better thinking. That educator who works with statistics is wise who knows when to stop figuring in favor of the thinking and the feeling which constitute the significant social values in dealing with all human problems. On the other hand, that educator who refuses to use statistical analysis is depriving himself of a useful tool. He handicaps himself in comparison with his fellow worker who wisely employs its services.

3. *Case study.* When statistical analysis and measurement combine to reveal irregularities in the development of the child, then it is that a further scientific approach to the problem may be used in a technique known as the case study method. Some one has said that many children succeed or fail who have no statistical right to do so. This is true. Statistical analysis offers no explanation for the phenomenon. But a complete case history of any such child may reveal the underlying causes that produce the success or failure. Every person is influenced by his emotions, by various environmental stimuli, and by the numerous factors that have entered to make up his past life history. Often a single emotional element is the one item that explains a serious maladjustment in the educational development of the child. The case history method brings us to the conclusion that there is no unnatural behavior—that, when the facts are known, there are perfectly natural causes behind all behavior of children. It is, therefore, a scientific means of explaining all normal behavior and of understanding that which is commonly considered to be abnormal.

A child, for example, is failing in his work—is not making the progress that is expected of him. It is so easy for the teacher to conclude that he is lazy, that he is not putting forth effort, that he must be compelled to work. Let her assemble the facts in a case history and she may have a very different story before her. The mental test indicates that his intelligence is above normal, yet he cannot read understandingly. Examine his home conditions, his early training, the influences to which he has been exposed. Let a physical

examination be made; perhaps the difficulty lies there. Consider all the facts in the case and let no verdict be made until all the evidence is in. This is what we mean by a case study. If the underlying cause is found and remedied, it has been accomplished not on the basis of a rash, hurried conclusion, but after a careful sifting of all the data. This is the essence of the scientific method.

4. *Experimental control.* Measurement, statistical analysis, and case study may all be involved in setting up an experimental situation designed to test the value of a given curricular content, teaching method, administrative plan, or educational procedure of any kind. An experimental study may, for example, have as its objective the evaluation of outcomes produced by two different teaching methods, each carried on under identical conditions (as nearly as this is possible) of pupil ability, teacher efficiency, and other environmental factors. One of the most valuable contributions which the "new education" could make to science of education would be a careful set-up of such an experiment—or a number of them—in which there were submitted to the test those principles for which "new education" specifically stands. Child initiative versus directed activity; self-expression versus teacher control; creative work versus imitative assignment; individual progress versus group advancement—these and numerous other problems may well be made the basis of experimental study. In each case, the two paired procedures should be evaluated in terms of outcomes as measured by previously determined standards of attainment; and in each case extreme care is necessary in controlling all conditions under which the experiment is carried on, and in holding constant all factors save the one variable which is being put to the test.

A further illustration of the experimental method comes from the field of behavior adjustment and involves a study being conducted under the direction of the writer. Our aim was to discover the causes of behavior maladjustment in school children and to determine the effects of certain types of remedial treatment. A large group of children in the schools were reported as having behavior difficulties. A complete case history was obtained for each child. The entire group was then divided into two sections, as evenly balanced as possible for age, grade, intelligence, and type of problem presented. One of these groups constitutes the experimental group, the other the control group. The control group is allowed to go on in the ordinary way in which it would be managed in the schools. To the experimental group intensive remedial treatment, involving psychological, medical, psychiatric, and social adjustment, is being applied. A second control group has been selected composed of children of the same age, same mental ability, and same grade as those in the experimental group, but showing no serious behavior difficulties. Our plan is to study the children in each of these three groups over a period of years, noting carefully the results of the treatment given to the members of the experimental group as it may be manifested in their behavior, and comparing their development with that shown by the members of the other two groups. We are hoping thus to isolate some of the factors that are responsible for behavior maladjustment and to evaluate the remedial treatment which is being given.

Such scientific experimental studies covering a long period of time are necessary for a more perfect understanding of the intricate reactions that grow out of the field of social relationships. Since education is most certainly and most in-

timately concerned with social relationships, the school becomes a vantage ground for carrying on such studies. Let us use it as an experimental field, not for the mere sake of experimenting or of statistical manipulation, but for the great cause of child welfare and child development in the "new education."

Those engaged in the fields of the exact sciences (so-called) have often ridiculed the efforts put forth in the science of education. Data involving concrete materials, physical, chemical, or biological combinations and reactions, lend themselves more readily to observation and to mathematical and statistical treatment. One can measure the work done by a ten-pound weight on a two-foot lever arm much more easily than he can evaluate the influence on a sensitive child's life of the quarrelsomeness between father and mother, which brings about tremendous unhappiness and frequently divorce.

Can tests be devised that measure general intelligence? Can one measure anything that education produces in the child except those skills which are attained through mechanical or drill processes? Can habits of work and attitudes toward life be measured? Can love of the beautiful in art, the appreciation of the song of a bird, or the desire to help a companion who suffers be evaluated? In truth, can any of the higher values of education which relate to the development of character and feeling, which relate to the spiritual aspects of life be subjected to scientific study and treatment? These are the questions that have baffled for centuries those who would attempt the scientific approach to the study of human nature, its conduct, and its development. The brief references in this article to the scientific approaches that have been made in educational research reveal the writer's leaning toward the affirmative answer to all the questions just propounded. The educational problems presented have been so selected that they give a fair sampling from almost every phase of the philosophy and of the science of education. Some one or more of the research procedures now available are usable under proper conditions on every problem of education. The light thrown may be small, but a little light may prevent one from groping in the darkness. A slight warning should stop one's haste in a fog. Research procedures have already done much to lift education out of dogma, blind unquestioned routine, and superstition. But there is much more to be done.

Here I would pause to give a caution. Dynamite has its value, but there are many who do not know how to use it safely. A reckless or careless driver may run his automobile into a ditch, causing death to innocent people, but through no fault in the automobile. Practically all good things are dangerous in wrong hands. We seek to make travel by airplane more safe by a rigid system of examination and license for pilots. In numerous fields of social activity there have been efforts to protect those who accept service from ignorant, careless, or inefficient leaders. This is well illustrated in education by the universal system of requiring teachers to have a certificate which is supposed to indicate the training and efficiency necessary for guidance of children. The activities of scientific research in education should likewise be safeguarded.

The following illustrations will show how well-meaning people misuse a valuable tool and bring not only harm to the individual immediately concerned but even widespread reaction against the cause of scientific procedure. In the field of mental testing there are some who take the I.Q. as the basis for classifying a child. On that alone they determine that he shall or

shall not be permitted certain rights. Others may add another factor, such as age, and determine that grade placement shall be by age and I.Q. More harm than good may easily result from such action. Some other element in the child's life may easily outweigh either of these and be the determining factor in wise placement. We cannot emphasize too strongly the fact that education deals with the entire child—mental, physical, social, and spiritual. In considering his proper educational growth, therefore, we must not make the mistake of acting on one phase of his life without considering its interrelation with every other phase. Many behavior difficulties of children arise out of just such mistakes.

Evils likewise develop from misuse of the standard tests of accomplishment. There are those who blindly try to force all children to reach the norm set for the age or grade under consideration, not realizing that the chief value of the standardized test lies in the interpretations it causes us to make as we study the child's attainment in the light of all other factors. In numerous instances the true interpretation reveals that the child's score should be farther from the norm rather than closer to it. In other words, one value of standardized tests lies in the prevention of standardized requirements alike for all children.

A third example chosen from statistical method relates to the dangerous use of a central tendency or average. Central tendency simply shows the most common practice. We must remember that majority is not synonymous with right. The mob is sometimes wrong. All advancement that education has made has at one time or another stood in the minority column. Clearly, then, that use of the statistical method which would lead people to follow the central tendency would eventuate in mediocrity rather than improvement. Unless great caution is exercised, the statistical average will cause teachers unconsciously to drift into the acceptance of that which is most commonly done as the desirable and right practice.

The development of interest in educational research has been so rapid and the training of workers so limited that our greatest danger now lies in too much speed. The popularity of educational research methods constitutes a real danger. Too many teachers are prone to accept any evidence presented in the name of scientific research without questioning its origin or its real significance. Educational practices that have evolved through decades and centuries should not be cast aside for new theories until the new have been clearly proven to be better than the old. There is need for open-mindedness, there is need for willingness to change, but we must think before drawing conclusions, and we should think again before putting our conclusions into practice. Let us follow cautiously but coöperatively the leaders of educational research, knowing that in them we have the safest guide to the improvement of educational science—that science on which the future of civilizations depends more than on any other.

TOWARD A HARMONY OF DIVERSE EDUCATIONAL METHODS

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Our schools have long since escaped from domination by the single method of rote memorization. More recently we have emerged from the era when Herbartian method reigned supreme. Teachers have discovered that each subject and each kind of activity has its own characteristics, and that, consequently, each requires a particular learning situation. Some educators claim that diversity in method is a sign of progress. But schoolmen have become wary of any method fad which seeks to establish itself as the only progressive plan. In the face of this trend we venture to suggest that, while it is desirable to fit each learning difficulty neatly with an appropriate approach, the multiplicity of methods may lead to confusion in the minds of the students and may retard social progress. On the other hand, Rugg, for example, insists that we must "distinguish clearly between two types of experience—the social and the individual."[1] Rugg's statement implies at least two contrasting methods of teaching. In which direction does substantial progress lie? Shall we move toward sharper distinctions between methods or toward a higher degree of harmony?

A study of the present situation reveals a diversity of aims which may be quite as responsible for the confusion as is the variety of methods. Indeed, the interdependence of aim and method requires that they be examined together, so that we may avoid the common error of separating means and ends.[2] We shall see the problem more clearly as we consider briefly the diversity of four widely accepted aims and their accompanying methods.

1. Pupils should learn the skills, the knowledges, and the processes which are most *useful* in present-day life.

This practical objective assumes that the pupil is preparing to be an effective producer in a great industrial civilization. He must conform to the economic conditions that he finds in society. Thus, his contribution to society may be made without retarding friction, and he himself may be successful in competition with others of similar training. The curriculum is selected by surveys of present economic activities and by job analyses. Emphasis is placed upon the attainment of minimum, necessary work standards which involve reduced error and increased speed. The methods used stress drilled repetition of activities in accordance with definite rules.

2. Pupils should acquire *problem-solving ability*, which involves *independent thinking*.

This aim, like the preceding, claims to be primarily practical and useful. It differs in emphasis by assuming that the problems of life are so constantly changing that education must develop ability to meet new difficulties effectively. Facts

[1] Rugg, Harold, *Culture and Education in America*, p. 254. Harcourt, Brace and Company, 1931.
[2] *Cf.* Bruce, W., "A Problem of Method in Educational Philosophy," *Educational Administration and Supervision*, 8: 590 (November, 1933).

and skills are treated as incidental tools in solving typical problems. As in the former aim, the purpose is to equip the individual for the efforts of life and through his personal efficiency increase indirectly the total resources of society. The problem-solving curriculum draws from a variety of fields those problems which promise to promote continuous growth in each individual. The method stresses individual independence in the proposal and development of suggestions with guidance by the teacher's Socratic questioning and by the findings of laboratory and practical tests. Mark the contrast with the preceding method's emphasis upon repetition of activities prepared for the student by the teacher.

3. Pupils should *develop esthetically*, that is, grow in appreciation and judgment of the arts and to some degree in artistic skill.

This objective points toward an increase in the individual's capacity to enjoy and a resulting rise in the general cultural level —to greater happiness for all. The emotional or feeling aspect of personality rather than the intellectual is to be modified. The learner is seen as a consumer rather than as an economic producer. While in the past this aim has been associated with leisure rather than with work, it is now widely assumed that the gradual supplanting of a toil-filled world of scarcity with a world of plenty, granting free time, justifies a shift in emphasis toward esthetic values. In addition, freedom from the struggle for bare necessities may promote development of esthetic quality in the workman's products without reducing their utility. This aim must thus become sufficiently comprehensive to stand beside the more utilitarian aims already mentioned. The esthetic aim usually implies that the artist will share his art with those who have attained capacity to enjoy its quality. The methods employed, however, are individualistic. They stress freedom to draw, to dramatize, to write verse, according to one's own fancy, and to judge independently one's own artistic acts and those of others. It is assumed that such freedom is essential for the cultivation of appreciation and judgment. This emphasis upon freedom contrasts so sharply with the rigid standards of scientific accuracy and social utility which the preceding aims stress that the esthetic method is placed almost upon a play level rather than a work level in the school.

4. Pupils should acquire *social attitudes* which lead toward *sharing* willingly in productive work with others and in pleasurable consumption and use of all the resources of society.

This objective centers upon social reconstruction through individual character building with the elimination of emotional maladjustments. Pupils are regarded as maturing citizens of a democracy. The school attempts to replace selfishness by a kindly, respectful, comfortable, coöperative attitude toward all persons. Honesty, fair-mindedness, and sportsmanship are cultivated. The method most frequently advocated is supervised play—learning sportsmanship in games. A second device is the school club, in which pupils share responsibility and develop leadership. In general, reliance has been placed upon extra-curricular activities on the semi-recreational level while artistic achievement, problem solving and the acquisition of knowledge have remained incidental elements within these activities. The most approved method involves an indirect approach to the change desired.[8] The indirectness of the fourth method sets it off

[8] *Cf.* Bruce, W., "Personality Development in Student-Teachers," *Journal of Educational Research*, 3: 191-202 (March, 1930).

quite sharply from the three already described.

These four aims and their corresponding methods confuse both the teacher and the pupil, for at each educational crossroad they are faced by the apparent necessity of choosing one of the four paths. If different paths are chosen at successive crossroads, conflict may inhibit progress. In case a given pupil meets several teachers of different subjects during the school week, he is likely to be led into diverse learning paths. He may be held closely to fact acquisition in history, but he is surprised to find that the science teacher emphasizes problem solving. In art and music classes he may discover that neither of the preceding methods of study is appropriate because the instruction promotes creative freedom. When the pupil goes into the gymnasium or the club room, he may find that another kind of freedom and another kind of responsibility are deemed appropriate. Is it any wonder that pupil progress is frequently inhibited by the query, "What does this teacher want anyway?"

Or, take the case of the elementary school teacher, who teaches diverse subjects by diverse methods. She seems a very different person during the arithmetic period than while aiding and encouraging the children in dramatization. She may treat the children quite differently on the playground than she does in the geography class. Such shifts and the resulting confusion often lead pupils to make invidious comparisons between studies, or even between teachers. As these contrasts sharpen, they verge upon emotional conflict, maladjustment, and split personality for both pupil and teacher.

On the other hand, a teacher may be inclined through training and interest in a particular subject, with its preferred method, to apply one of the four methods over the entire teaching area. Problem solving may be forced upon the art class or social sharing may be applied in mathematics, where each individual should be acquiring substantial knowledge independently. Rugg accuses Dewey of misleading American teachers into an overemphasis upon experimental inquiry or problem solving—a "preparatory" form of individual action—and consequently into a neglect of final or "consummatory" action, such as esthetic appreciation. The critic claims that individuality is not achieved until the learner rises above the entanglements of problematic, preparatory, social situations and "embraces life in a glorious existing moment"—apparently a moment of esthetic thrill.[4] Dewey's only answer to this challenge apparently is the publication of a revised edition of *How We Think*.[5] This may appear to some like downright perversity. Harmony can scarcely arise out of forcing one method upon all learners in a multitude of diverse situations.

Another attempt to get around this problem involves the assumption that the learner passes through a series of life stages, each stage having its own set of characteristics and, therefore, its particular method.[6] Esthetic freedom might be granted to the kindergarten and the first three grades. Drill on useful facts, skills, and processes would be the method in grades four to six. The junior high school might devote itself to social sharing. Dewey's problem solving could be postponed until the senior high school. Pro-

[4] Rugg, *op. cit.*, pp. 224-230.
[5] Dewey, John, *How We Think*, (Revised Edition). D. C. Heath and Company, 1933.
[6] *Cf.* Miller, Irving Elgar, *Education for the Needs of Life*, "Stages of Development—Dominant Point of View in Instruction," pp. 95-153. The Macmillan Company, 1917.

spective teachers might be divided into four different types according to temperament and the members of each type guided into their respective fields, where they would be trained in that peculiar methodology. However, modern psychology challenges these sharp distinctions both from the standpoint of overlapping of the assumed stages in any grade group and more fundamentally through the denial of the existence of stages as distinct as those proposed thirty years ago by G. Stanley Hall.[7] At present the trend is toward such an integration of the school system throughout, from the kindergarten to the senior high school, that the learner may be freed from the dangers of sudden shifts in method and aim. Since we cannot evade the issue by this device, we must face the problem again.

The reader no doubt has protested already that in actual school practice these four aims enter into more or less intimate relationship with each other. Suppose we consider the degree of relationship which can be achieved in such a type of learning as the constructive arts. The preschool child needs to acquire muscular control or skill, so we provide him with working materials—sand piles, building blocks, etc. We give him a chance to *make* things. As the "making" process goes on through several years, he learns to choose between the substantial and the insubstantial, the harmonious and the inharmonious. He develops practical judgment in the use of eyes, ears, and hands. In some degree he acquires an esthetic sense. This learning is individual and independent. It is sustained by experience rather than by the word of parent, teacher, or textbook. The child acquires individual interests. He becomes self-reliant. Whatever skills he acquires, whatever problems he solves are tested objectively. Each "making" activity involves in a naturally intimate relation the aims and methods which we have numbered 1, 2, and 3.

What relation does the fourth aim and method of social sharing have to "making" activities? On what are willingness to share, mutual respect, and affection based? We must concede that a direct feeling of affection depends in part upon crude conditioning — propinquity with pleasantness. But the growth of desirable social attitudes depends also in large measure on what we find the other person can do or make. More or less consciously we come to respect those persons who do their share of the world's work in accordance with their peculiar abilities. We feel willing to share with them our own individual product. The diversity of talents promotes rather than reduces the possibility of building a society which is knit tightly by bonds of mutual respect. At the same time emotional stress and mental maladjustment are relieved in the midst of "making" activities. Burnham's statement that a task, a plan, and freedom are the essentials of mental health implies that here lies the foundation of a wholesome society.[8] Appropriate opportunities to make things produce indirectly those desirable social attitudes which are the essence of personal character.

The school situation which will combine all four aims and their accompanying methods is one in which pupils work side by side, so that they may see each other's work and thereby grow in mutual respect. However, the work must be diverse and

[7] *Cf.* Thayer, V. T., *The Passing of the Recitation,* Chapter V, "Learning as an Active Process and G. Stanley Hall." D. C. Heath Company, 1928. Also Brooks, Fowler D., *The Psychology of Adolescence,* Chapter IV, "Mental Development During Adolescence." Houghton Mifflin Company, 1929.

[8] Burnham, William H., *The Normal Mind,* Chapter VIII. D. Appleton and Company, 1924.

independent, not merely running a school-achievement race at varying speeds. Some of the work may well be quite independent in the sense that the individual follows a special interest of his own while his classmates participate in it only as critics and admirers of the product. At least this much should be granted in agreement with Rugg's insistence that the individual shall have opportunity to discover his own abilities through action and to form his own appreciative judgments of his own activities. Each individual must experience the artist's feeling for his art. As Rugg puts it, "This attitude of self-cultivated awareness seeks as its consummation the production of honest, integral things . . . a spoken sentence, a symphony of tone, a motor car, a school, a dramatic scene, a personal philosophy of living."[9] Much of the work, however, may well involve a closer coöperation of individuals in some joint project to which they contribute diverse products for a common interest. The group activity will include also conferences in which ideas originating with individuals are developed, tested, modified, and organized into a plan or conclusion by joint problem solving. Thus, the pupils may acquire a social way of life that is appropriate for a complex, democratic civilization.

From the standpoint of method, two general conclusions may be emphasized. First, if educators wish the coming generation to be well-informed, scientific, artistic, and coöperative, a variety of appropriate activities and methods must be provided in the school program. Experimental problem-solving and artistic expression must both be included. Along with these more individualized activities socialized group action must occur. These coöperative activities must be vital enough actually to absorb energies which are now flowing in maladjustive, competitive channels.[10] Secondly, the production of forceful, integrated individuality will be promoted through activities which involve a practically simultaneous movement toward all four aims. Instead of trying to keep the four methods separated, the teacher should bring them into as close "relatedness"[11] as possible.

The so-called "unit method" of the elementary school will be strengthened as teachers realize that a more effective degree of unity involves, in addition to bringing together different subjects, the relating of apparently diverse methods. This does not mean, however, that the method emphasis may not vary in accordance with the needs of the child as determined by age, previous training and special talent. Nor should our desire for harmony exclude special emphasis according to present social needs. For example, when Dewey calls for renewed attention to social aims and social methods, he justifies this emphasis by the statement, "The creative activity of individuals as a necessary *part* of the wider office of social reconstruction has been the element in the theory which has affected practice in this country in a serious way."[12] This implies that in Dewey's opinion our progress in the arts and their individualistic methods has been greater than in social-sharing

[9] Rugg, *op. cit.*, p. 230.

[10] Parenthetically, we note that Rugg declares, "I am at one with Professor Dewey in smashing . . . the concept of 'individual success through competition.'" *Op. cit.*, p. 253.

[11] See E. C. Lindeman's definition, "Relatedness is the qualitative term which implies that the whole procedure of relating is a psychological one at bottom," *Social Education*, p. 98. New York: New Republic, 1933.

[12] Dewey, John, "The Social-Economic Situation and Education," in *The Educational Frontier*, edited by W. H. Kilpatrick, p. 33. The Century Company, 1933.

activities. Whether we agree with Dewey or with Rugg, the problem of relating diverse methods will involve continuously the question of appropriate emphasis in accordance with the particular situation faced. As teachers plan each school activity, they must consider carefully what contribution it promises to make toward effective knowledge and skill, scientific attitude, appreciative awareness, and cooperative spirit. They must recognize that none of these aspects can be enhanced except through specific activity. None can be left safely to "natural development" nor to "incidental learning." Nor should wholesome integration be left to mere chance. The teacher must be ever ready to adjust the method emphasis to the needs of the occasion.

Relating the four methods which have been cited in this article constitutes an example of the need for harmony. But we do not wish to imply that other methods are to be excluded. Methods now in use or methods which changed conditions may necessitate might be welcomed into the larger harmony. Indeed, a change in the social order might call for a method emphasis which would supersede the four here described. However, there would still remain the necessity of relating this new method to those which students had already learned to use. As long as integration of personality continues to be an important condition of human life, the harmonization of educative methods will be a teaching problem.

The "making" type of activity has been stressed in this article because its recent use by progressive schools has shown its flexible adaptation to stimulation of search for information, problem solving, individual creativeness, and social growth. Other kinds of activities—finding, using, contemplating, sensing—may also furnish fruitful situations in which harmonious integration of methods might occur. Whenever an activity promises well for the organic integration in which individual happiness and social efficiency merge, let us try that activity without quarreling about its classification, for no sharp lines can be drawn between "sensing" and "making," or between "making" and "contemplating."

The application of such an inclusive "unit method" may not be as easy as using a single, relatively simple method. Teachers may find it harder than shifting from one distinct method to another as the subject, type of activity, and pupils change. Nevertheless, the beneficial effects of integrated and continuous growth, when compared with the dangers which are evident in the opposite direction, warrant the attempt in spite of the difficulties. Supervisors, likewise, will find that their techniques of guidance and their processes of evaluating pupil-progress and teacher-development will undergo fundamental changes as the movement toward harmony with diversity permeates the school. The need for harmony of methods constitutes a challenge to our teacher-training institutions to provide a broad, flexible experience for prospective teachers rather than narrow training in special methods and devices.

THE BOOK OF NEWARK

Steps in the Supervisory Development of a Project in Local Patriotism

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It was perhaps the late John Cotton Dana, for many years librarian of Newark, New Jersey, and a notable pioneer in many directions, who first suggested that patriotism ought definitely to have its roots in the community wherein a person lives, and who went on, with his usual Yankee mingling of practicality and idealism, to work out in coöperation with the Newark school authorities a procedure by which such local patriotism could be effectively taught to the young people of Newark.

After an experience of several years with this procedure, Mr. Dana described it in some detail in an article entitled "The Study of a City in the Schools of That City."[2] Mr. Dana told how, about 1903, the Newark Public Library had sought for literature of interest to young people on the history, population, government, industries, and other features of Newark. Such material was found to be but scanty in quantity, scattered and fragmentary in nature, and was addressed to adults.

Finally, the library decided to publish a little local material of its own. One of the editors of a local paper, Frank J. Urquhart, of the *Newark Sunday Call*, was asked to write three short stories of Newark's origin and development. These the library issued in pamphlet form, one each winter for three years. They were lent to young people; were given or lent to teachers, either in single copies or in packages of twenty-five, for use as readers; and were sold to the general public at five cents each.

In the three years during which the pamphlets were in course of publication, interest in Newark study increased steadily in the schools. Instructions began to appear in the courses of study in history, geography, civics, and the like, to make use of Newark material in connection with these subjects. A constantly increasing stream of children came to the Newark library in search of data, and information was sought for by the library in newspapers, books, city reports, and other sources. Short accounts, in multigraphed form, were compiled of Newark's streets, parks, trees, water supply, sewage, health department, fire department, police department, schools, and other aspects of the civic life. These "Newark Study" stories were usually from 500 to 1,200 words long and were circulated freely in the schools. So far as Mr. Dana was able to discover from extensive inquiry, Newark was the first city to do this sort of thing.

Each year on Newark Day, May 17, a modest exhibit of all kinds of prints and pictures about Newark was held in the library, and was annually visited by thousands of children.

[1] At the time this project was being carried out, Mr. Herzberg was Supervisor of English in the Newark public schools.—Ed.

[2] *The Pedagogical Seminary*, 18: 329-335 (September, 1911).

The plan of giving Newark's young people a better idea of the community in which they lived met with the hearty approval of the school authorities and of the local Chamber of Commerce. The former asked Mr. Urquhart to revise his sketches, cast them into the form of a continuous narrative, and publish them as a book, guaranteeing the purchase of 2,500 copies (later an equal number more were purchased). Mr. Urquhart did this, in most readable and attractive form.[3] A little later the Board of Education ordered made for school use a hundred large maps of the city, filled with adequate material that could readily be used for civic training. Meanwhile, a small map was made and distributed in pads of 100 for desk use. The course of study was further revised to make Newark study a more integral part of the work, and an assistant superintendent of schools, J. Wilmer Kennedy, working in close conjunction with the library and making constant use of its mimeographed material, prepared forty leaflets, from one to eight pages each, as a systematic course in municipal civics.

Mr. Dana points out in his article that "not only is it true that knowledge of facts about one's city is essential to good citizenship, it is also true that these facts furnish some of the best possible material on which to train the young. . . . At the schoolroom door are found the things which can and should illustrate the textbooks on many subjects."

Again, in a preface to Mr. Kennedy's material, Mr. Dana said:

> The helpful kind of patriotism is the kind that grows out of a knowledge of one's town, of her growth, her people, her property, her government, and her needs. This knowledge develops, first, an intelligent interest, then a sympathy, then a reasonable affection, a wise and temperate jealousy for her good name, a wish that she may prosper and grow more beautiful, and, finally, a desire to help her to become greater and finer, a bright and clean workshop, and a home for the best of men and women.[4]

SIMILAR PROJECTS

Before passing on to my own project, I may note that in another New Jersey community Elsie Parkhurst has recently carried on a project in local patriotism of a kind akin to Mr. Dana's: "A Social Study Unit on the Local History of Summit."[5] The account of this was published after the Newark project was well under way, but it has many similarities in goal and procedure. Miss Parkhurst states that her objectives were threefold: to stimulate an intense interest in the community and its history; to give ideas of the background of the city's history; and to show factors contributing to the building of Summit. Her project involved original research, called for coöperation with other school departments, and culminated in a book. It was confined to the seventh grade.

Aside from the general suggestion given by the idea of Newark study as worked out by Mr. Dana and his assistants and by Mr. Kennedy, the definite germ for the project I am about to outline came from a highly attractive British publication, non-scholastic in character, entitled *The Book of Liverpool*.[6] This is a beautifully printed and illustrated volume issued in connection with the celebration of Civic Week in Liverpool. Miss Margaret Bevan, later a visitor to the United States, was then Lord Mayor of the City. A small group of distinguished

[3] *A Short History of Newark*, 1909.
[4] *Newark in the Public Schools of Newark*, 1918.
[5] *New Jersey Educational Review*, February, 1933.
[6] Edited by Matthew Anderson and published by the Liverpool Organization, Ltd., 1928.

contributors to the pages of the book seek to "interpret Liverpool to herself as well as to the outside world and to record her achievements in various forms of endeavor. They have also sought for the meaning of Liverpool's existence and, inspired by their love of her, have painted a vision of the City Perfect at the top of a well-nigh unscalable height."

Chapters in the book deal with the changing face of Liverpool, Liverpool as it should be (an article by the Lord Bishop of the city), the city government, the Port of Liverpool, Liverpool as a market, industrial Liverpool, education in Liverpool, its literary associations, its contribution to art, Liverpool and the drama, Liverpool and music, the University of Liverpool, and Liverpool cathedral. There are excellent reproductions of photographs and drawings, including two dry-points by the late Hamilton Hay. The book was sold for a shilling a copy—with the help of some advertising matter at the back.

PRELIMINARY PROCEDURE

It occurred to me that Newark study would be greatly furthered if a similar *Book of Newark* could be produced, and I felt that this was a possibility. The scheme I hit upon was to ask each school in Newark, both elementary and secondary, to write at least one chapter for such a proposed volume. Twenty-five elementary schools (including an ungraded school) and ten secondary schools responded with the actual submission of material, some schools contributing several chapters. The actual amount of manuscript sent in was astonishing.

To obtain this result a somewhat elaborate procedure was involved. As the supervisor of English, I assumed general charge of the project, having secured the approval of John H. Logan, superintendent of schools, and of Dr. Lambert L. Jackson, the first assistant in special charge of instruction. It became necessary to enlist the active coöperation of the director of art, of the principals of all schools concerned, of English and history teachers in the secondary schools, of teachers in the elementary schools (some departmentalized, others not), of the Public Library (whose coöperation was particularly hearty and helpful), and of other outside agencies, such as the Chamber of Commerce, various firms and business men from whom information was to be obtained, private citizens, and others. While the effectiveness and value of the coöperation naturally varied somewhat, it was in general possible to secure excellent help from all who were approached, and numerous individuals went far out of their way to provide information or make suggestions.

WORKING OUT THE PLAN

The actual procedure was as follows: I prepared first a list of one hundred possible chapter heads, greatly varied in character. Some of these dealt with governmental activities, such as the departments of the Newark city government. Others gave institutions, such as the Newark Museum, or business enterprises, such as Newark factories or department stores, for discussion. There were other assignments of a historical nature, such as Newark in the Civil War, or the history of a street; still other chapters dealt with Newark and the drama, private schools in Newark, and the like. Occasionally the chapters called for careful description, as of the bridges over the Passaic or the new Pennsylvania station.

These topics were arranged in five lists, and to each school in the city was sent a list, together with a careful explanation of the project. (For the elementary and junior high schools the principals acted as agents in the projects, for the high

schools, the heads of the English Department.) Each school was asked to select the topic or topics it wished to treat and to notify me at once of its choice, so that duplications might be avoided. (It was found, incidentally, that in one or two cases it was not desirable to prevent such duplication, a particular topic—the history of a street, for example—proving one especially 'natural' to two schools.) This letter of instruction was followed up, wherever it was necessary, with personal conferences. Occasionally, the supervisor of English addressed a group of students working on the project and gave concrete suggestions or help; for example, names of individuals who might be approached. One or two bulletins also went out from the superintendent's office, with fuller instructions as to how work in the Public Library was to be carried on and as to the form of the final manuscript.

As to the form, the director of art, Miss Marguerite Marquart, proved unfailingly helpful; through her coöperation, moreover, the art side of the project was very remarkably developed. When the chapters came in at the end of the project, it was found that they were, almost without exception, most pleasingly illustrated; and in some cases work of a high order had been done. In one or two instances a student of particular talent provided the illustrations; in others, an entire class provided a set of original drawings. A few of these drawings are worthy of being set alongside the work of professional artists.

No rigid procedure was enforced, in order to give full play to the individuality of those concerned, to the variations among schools, and to the differences frequently occasioned by the nature of the topics chosen. In general, the work involved either library research or original research or both. The Newark Public Library, as has already been indicated, has in its files a vast store of carefully arranged material and pictures, and this was made available for the use of students. On many of the topics chosen, however, no data had ever been collected; the consequence was that some valuable original research was carried on. Thus, as innocent-looking a topic as "The Bridges over the Passaic" resulted in the discovery that the authorities of the two counties involved, Essex and Hudson, had no material that students could use. These authorities became interested and helped the students secure this material from the State Department at Trenton and from the War Department at Washington. When the history of streets came to be investigated, there was a similar paucity of data. "Old-timers" were then approached, either in person or by letters, and many of them gave abundant help most willingly. Often the facts that they furnished needed to be checked, as when one eighty-four-year old man stated that Thomas A. Edison at a certain time had lived on a certain street in Newark. In the case of topics involving present-day institutions, like newspapers and department stores, or persons still living, like authors now resident in Newark or once resident there, information was similarly sought at first hand, and many prize autograph letters were the result, so far as living celebrities were concerned. Where visits were necessary, they were usually paid by committees rather than by individuals, and full reports were rendered.

The project stretched approximately from the first of the year (1933) to the middle of April. The chapters were then sent to the library of the Board of Education and were placed on exhibit there in June. In the fall a public exhibition was placed on view in the Newark Public Library. One unexpected result of the project was that in one school with a

printing plant[7] a booklet was printed—a "Guide to Newark," full of valuable information not readily available elsewhere. The small edition of this booklet was immediately exhausted, and during the summer some elementary teachers came to the library and copied sections of it verbatim, so valuable did they find the contents.

OUTCOMES OF THE PROJECT

What were the outcomes of the project, other than the actual production of a somewhat disparate body of compositions and art work?

First may be mentioned the training in research which the project afforded. Students were shown the way in which historians do their work, and there was an opportunity to exercise the same qualities of persistency, honesty, accuracy, and ingenuity that we admire in good historians. The chance for indirect character training inherent in such research projects has, it seems to me, been somewhat neglected.

Secondly may be stressed the values of the contacts of the schools and the public which the project gave—a contact especially to be desired in these days of depreciation of public school education. The citizens, the officials, and the business men of the city felt in a definite way that there was being aroused in the young people of Newark, through the schools, an intelligent interest in the city, and they welcomed the opportunity of giving help and information to the students who approached them. Similarly, the young people themselves were enabled to connect their academic work with the world beyond. Some of them received valuable lessons in the technique of approaching people through interviews or correspondence. Some of them were awed and thrilled, to good effect, by direct contact with some local celebrity.

[7] Franklin School, Francis H. Budd, Principal.

Valuable in the same way was the generous publicity that the newspapers of Newark and of New York gave the project. This was an opportunity again to cement good will between the schools and the community at large.

From the administrative point of view the project was worth while because it created opportunities for coöperation within the schools. Groups worked together harmoniously, and the walls of subject matter were temporarily broken down in a unified effort.

Within the field of English itself, teachers and pupils had the opportunity of trying out several forms of composition, oral and written: letters, interviews, reports in writing or by word of mouth, compositions written by individuals or by persons serving on a committee, even an entire book, etc.

COMMENTS ON THE PROJECT

The mayor of the city at the time when the project was started, Jerome T. Congleton, wrote a commendatory letter in which he remarked that he knew "of no more practical instruction in civics than such work has entailed." The present mayor, Dr. Meyer C. Ellenstein, maintained that "it is well, in my judgment, that our young people should imbibe local patriotism in this wholesome fashion; and I am confident that many of the adult citizens of our community will profit greatly by an examination of the results of these young people's researches and investigations." E. W. Wollmuth, executive vice-president of the Newark Chamber of Commerce, concluded that we had "done a job that needed doing, by persuading young folks in our Newark schools to go out on the highways and byways in quest of data concerning the great and important city in

which we live. I am confident that all of the large number of students who participated in this fine endeavor profited greatly and will be better—because well-informed and proud—citizens of our community."

One teacher wrote:

> The results were gratifying, not only because of the local history that was unearthed, but for the splendid response received from busy men and women who could find time to talk and write to strange boys and girls that they might successfully work out a school project.

Another stated:

> I deem the project a most useful one because (1) it familiarized the group with the necessary steps in acquiring information from various sources; (2) it indicated to the pupils the results of coöperation, while it gave opportunity to several to display their individual initiative and resourcefulness; (3) it provided for the class as a whole a strong stimulus to participate in a vital study of Newark's set-up; (4) it lent itself admirably to a coördination of the history and geography of Newark and New Jersey with reading, spelling, and composition.

Still another teacher wrote:

> The project seemed particularly valuable for several reasons. It sent pupils out in search of knowledge in the world itself, rather than in books. Newspapers, magazines, manufacturing plants, and objects of art became the sources of information. The project furnished a real objective for the work; and while books themselves were inanimate objects to most of the class, the idea of contributing to a book proved a real stimulus. The fact that it was class work stimulated individual pride to be able to contribute, at the same time making that individual effort a really social product; for the other pupil's effort had to be good too, and so a spirit of helpfulness and coöperation developed. Furthermore, different kinds of ability were demanded. The pupil who liked to browse around a library could share the knowledge thus gained with a pupil who liked to write, and the artist and the typist had a chance to contribute.

POSSIBILITIES FOR CONTINUING THE PROJECT

This project is still unfinished, so far as complete coverage of the possibilities of Newark as a city are concerned—perhaps never can be finished, like Tennyson's city in the *Idylls*. At the beginning of 1934 schools were asked if they wished to write additional chapters during the coming year, so that certain gaps in the material might be filled in; a number responded. It is likely also that in due time (perhaps in 1936 in connection with the anniversary of Newark's obtaining its charter) the material may actually appear in book form. In case the project continues, we shall want to make some improvements in our technique.

The library research work should be animated by definite ideals. Too many students, we find, copy data exactly but without giving credit. Many adults likewise have no notion of literary honesty. There is opportunity, too, for an inculcation of greater carefulness in the handling of material; and we find it necessary at all times to preach against vandalism, one of the great problems of a public library.

So far as literary research is concerned, it links up with research into first-hand material as an opportunity for character-training—as has already been indicated. This opportunity can be made more definite perhaps if students are furnished with a more definite code; and possibly we shall start out by working at such a code coöperatively.

The project has proved that coöperation is feasible, and if it continues next year, we expect even closer and better

coöperation. About a score of schools did not enter the project, largely because of the character of the students or because they included only the first six grades. It may prove desirable even for such schools to participate and to submit such work as they can prepare. One excellent chapter was contributed by an ungraded school. It may be possible, too, to work out a scheme of more systematic coöperation with Newark's government, business houses, institutions, etc.

WHAT MAKES PROGRESSIVE EDUCATION PROGRESSIVE?

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Whether or not one is a member of any "cult" or "ism," it is perfectly normal for one belonging to any profession or occupation to think that he is progressive and to hope that the world will regard him as such. The doctor purchases new equipment better to serve suffering humanity and to impress upon his patients the fact that he is keeping abreast of the times. The modern "hausfrau" changes her technique and purchases various types of electrical equipment, perhaps not entirely for the sake of efficiency but partly for show. The intelligentsia continue to read, attend the theater, talk politics, discuss social problems, and associate with those who have achieved some measure of success or social position. Perhaps in a sense all of the above should be characterized as being "progressive."

"Progressive" may be defined as "encouraging, making or tending to make progress." Undoubtedly all intelligent human beings are in a sense progressive in that they desire to achieve more, to do something better, or to discover new techniques and methods that will somehow make for more recognition, success, and happiness. It may be seriously questioned whether or not progress is made with respect to the dogmas and tenets which are indoctrinated in us. Here progress may not necessarily mean a complete change of ideals and standards, but simply that of living more in conformity with the best of those now existing.

Practically all objective educational standards and measurements worthy of the name have been developed within the past generation. Only a few decades ago all educational criteria and standards were entirely subjective. Education is becoming more and more a science with the rapid increase of standardized testing and measuring devices. With the advent of newer and better instruments of measurement, subjective measures are being used less and objective ones more. Even though we have no real science of education, we have science in education. Scientific procedures are being applied both to subject matter and to method. Scientific techniques applied to education have already yielded much data which have resulted in an improved curriculum and better methods.

Our entire educational history has been replete with change, development, much theory but little experimentation. A great deal of our educational philosophy, curriculum, and method is remade each generation. To the extent that change and devel-

opment are valid criteria, our entire educational history may well be characterized as progressive. Much change and development have taken place since Tycho Brahe listened to the babblings of an imbecile with the hope that somehow the imbecile would be of assistance in revealing to him some of the secrets of the universe. In fact change has taken place so rapidly that it almost seems to us that the use of the hickory stick as an accessory to learning the 3 R's belongs to the Middle Ages. Educators are beginning to realize that we are living in a world of change, and that education should either keep abreast of our rapidly changing social order or construct a new order more in keeping with man's nature, needs, and welfare.

Newness or change should no longer be the sole criterion by which a movement or method is characterized as being progressive. Simply because a method is new and represents change does not necessarily mean that it will come closer to the mark than the old which it is designed to replace.

Science has made rapid strides within the past few years. New laws have been discovered. New and better measuring and testing devices are being utilized. New phenomena which seemed impossible of measurement or were absolutely unknown until a few years ago are being weighed, measured, and tested daily. The new education, to be accepted as being really progressive, should be subjected to the best criteria and scientific testing available. It should be looked upon with doubt and skepticism until it has been demonstrated that it is superior to the old. Until that superiority is revealed, it might be best to consider it as aiming at progressive education. Progressive education is concerned with the whole of the educative process—the nature and needs of the child, educational aims and objectives, and subject matter and method. To be really progressive, increased benefits must accrue to the child and, through the child, to society. The benefits derived need not all contribute directly to economic and social efficiency, but they should make for increased human happiness, improved ideals and purposes in life, better and more intelligent wants, and better and more worthy membership in home and society. The ideal should be a society that is not fraught with the evils, trials, and vicissitudes as is our own.

Sometimes an administrator feels that he is being progressive when he initiates a new method or technique concerning which he has but little real knowledge. A superintendent who had heard of the project method decided it was the thing for his school. Certainly, it would be an indication of progress. The teachers were required to outline projects for a semester in advance. They did not know what it was all about; neither did the superintendent. By no stretch of the imagination could the attempt be described as being progressive. It was merely an attempt to fool the world and himself into believing that he was instrumental in initiating progressive measures. The superintendent did not have a proper appreciation of the significance, function, purpose, and limitations of the project. Had he fully appreciated the project and then educated his teachers to the same, the chances are that he might have made an important contribution to method in his school.

As has been previously stated, a movement, method, or technique should be judged in the light of the best available criteria and scientific techniques to be had at the time. What was adequate and constituted the best techniques of a generation ago now seems quite inadequate. As each generation modifies and adds to the

social inheritance of previous generations, so must our criteria and standards of judging be constantly revised in the light of all that we know concerning the child, subject matter, and method.

What, then, is progressive education? In the light of the argument here presented, it would seem that modern education, to be fully progressive, should meet all, or at least most, of the following requirements:

1. Aiming to keep abreast of our changing social order, or modifying and reconstructing our social order better to serve humanity.
2. Adopting an educational philosophy compatible with the best individual and social welfare and then affording ample practice of the aims, ideals, purposes, and subject matter taught, which will enable the youth better to achieve the social and individual aims of education that are synonymous with life itself.
3. Seeking to consider first the child and social well-being.
4. Applying the best available principles of child nature and development to the instructional process; and constantly being on the lookout for new information relative to human nature, with its application to the learning process.
5. Recognizing the importance and interrelationship of both physical and mental health, as well as using the available techniques to effect the best possible physical and mental health of the school child.
6. Setting the stage to develop the best possible interests, habits, attitudes, and thinking consistent with each stage of the child's development.
7. Analyzing and diagnosing the needs, abilities, and disabilities of school children and giving remedial treatment in line with the diagnosis made.
8. Enabling the child to apply the facts, principles, and techniques learned to life situations.
9. Providing adequate motives and study habits which will make for a maximum of problem solving and activity leading to further activity.
10. Providing sufficient freedom to insure interest, normal self-expression, completion of started projects, persistence, independence, and responsibility.
11. Creating life situations in the schoolroom, so that education will not mirror life but, to every extent possible, be life itself.
12. Setting up problems of research which will result in a better understanding of child nature, and securing ways and means for the improvement of instruction.
13. Providing adequate opportunities for normal self-expression which will make for better initiative, poise, mental health, and social adjustment.
14. Studying, evaluating, and testing both the new and old to determine the relative value and importance of any theory, plan, technique, method, or phase of subject matter.
15. Having adequate guidance facilities through both the home room and a trained counselor, thereby keeping the mental health, the morale, and the educational, vocational, social, and moral adjustments to the highest level.
16. Securing the highest degree of coöperation and understanding from the home through an intelligent plan of adult education.
17. Educating teachers in service in order that education in its broadest sense will function in the best possible way.

It may be logical to conclude that any educational program is progressive to the extent that provision is made for the above and similar principles, which are essential in developing personalities that will not only meet the exigencies of life in the best way but will also make for the greatest amount of happiness.

THE INTEGRATED CURRICULUM IN THE JUNIOR HIGH SCHOOLS OF HOUSTON

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The integrated curriculum was introduced into the junior high schools of Houston in September, 1931, as an experiment to be carried on throughout the entire semester. Four schools, representing a cross-section of our city system, were chosen as centers for this try-out.

These schools used all of their low sixth grade classes, which were composed of students entering junior schools from the elementary schools. These same centers continued the integrated work throughout the second semester with the same students classified in the high sixth grade, and with all of the new low sixth grade pupils, while the remaining eight junior schools introduced the use of the new curriculum in September, 1932, with their beginners.

An important factor which influenced the success of such a plan was the preparation of the course of study units. Materials from the various subject-matter fields were selected and organized in such a way that they centered much of the pupils' learning around a few fundamental themes having integrated relationships. The number of units developed under any particular theme has varied according to emphasis needed. Its value as contributing to a better understanding of the unit for a particular grade level has been the criterion for selection of subject matter. One field of subject matter may receive major emphasis in one unit, while other subjects may receive emphasis in other units. Some units readily lend themselves to more extensive use of certain subjects; for example, the unit on Communication is developed under the theme, *interdependence,* and is especially rich in the English and social studies aspect, while the unit on Texas is developed under the theme, *adaptation,* and is equally rich in the social studies, science, and the English aspects. Some units use one or more additional subjects, such as art, music, mathematics, physical education, home economics, and industrial arts for their development.

No instructor in a departmentalized school can be a specialist in every subject, so valuable helps have been included in each unit, such as: suggestions for organizing the unit as a coöperative activity, overviews containing the main ideas of the references cited and giving teachers a background of the subject matter to be used by the pupils, content materials, suggestions for evaluating the work of the unit, and a bibliography. Teachers then come to have a common understanding of the unit and find the important contributions of their own subjects.

The most vital factor of all those for which this type of curriculum was inaugurated is the rich and varied learning experiences provided for the students—experiences designed to stimulate their enthusiasm for information, to develop right attitudes, and to improve skills.

The regular class procedures in the departments of the school give evidence of

the usefulness of the integrated units as unifying interest for teachers; their general understanding of materials and procedures has resulted in higher standards of work.

When a group of teachers has been scheduled to use the same unit with their classes, they meet in conference to discuss each aspect of the unit with a view to organizing their plans for the time during which the unit is to be used. The same materials may be used in several departments, but for different purposes. The English teachers select titles for compositions drawn from the social studies. The social studies teachers and others consult the English teachers for information pertaining to correct English usage and to manuscript forms desired. In this respect, all teachers become English teachers, emphasizing at all times good English usage.

One social studies teacher reported that she had without hesitation assigned written compositions to low sixth grade students, and had been surprised at the unfinished product received. After consulting with the English teacher, however, she discovered that emphasis in that grade was on "sentence sense" and that these students had not yet worked definitely toward organizing ideas into paragraphs.

During the time that a given unit is being taught, teachers have two or three general meetings and numerous group meetings for the purpose of studying their courses and getting suggestions from one another as to the needs of the pupils and the materials to be selected for use.

To get the group started in approaching the unit for lesson planning, all teachers using a particular unit meet and select a chairman, who assumes responsibility for calling meetings, for assembling and organizing the suggestions so selected as to give balance to the program.

A general outline for the culminating activity is organized; then the chairman calls the supervisor into consultation with the entire group, at which time various aspects of the unit development are discussed with a view to evaluating each phase in its relation to its entirety. The outline for the culminating activity is then perfected for its final presentation.

After teachers have familiarized themselves with the unit and have outlined their lesson plans, the interests of students are reported and suggestions for a culminating activity are in order. To illustrate, one group of low sixth pupils and their teachers decided to give as a culminating activity based on the unit, "The Earth and Its People," an auditorium program entitled "Around the World in Forty-five Minutes." The stage was arranged in a colorful setting to represent an ocean liner. Several of the speakers sat on the deck. Pieces of art work were hung on the stage curtains. Graphs, prepared in the mathematics classes, were used to illustrate talks. Poems that had been set to music were sung. Numerous talks, readings, reports, and dramatizations were given. Invitations to this program had been written and sent to former teachers and principals, members of administrative offices, parents, and friends.

The culminating activity is intended to show in bold relief the work of the respective departments of study. For instance, the oral and written expression of any student is important to the English teacher, but the social studies, art, music, mathematics, or other teachers must appreciate what their respective departments have contributed to the oral expression through the enriched information and appreciation derived and inspired by their contributions.

Sometimes the culminating activity is the preparation of a class booklet, an

exhibit, an open forum, or inter-class visitation, at which time each class presents some phase of the unit.

As these plans have progressed through their formative stages to their present state of development, continuous growth and improvement have been noted. Some of the most significant are:

1. Relationships of the different subject-matter fields.
2. Training in appreciation, selection, and organization of class programs.
3. Coöperative effort in group activities.
4. Foundation of research activities.
5. Increased interest in designing and constructing models for representations of class projects.
6. More complete integration of learnings of related subjects.
7. Increased opportunities for incidental training in courtesy, citizenship, and other desirable traits.
8. Greater coöperation of teachers, greater interest in the attitudes aroused, and respect for the departments other than their own.
9. A common cause challenging the group toward accomplishment of the task.

In conclusion, we wish to say that, although there are problems yet to be solved, the worthwhileness of the integrated program is indicated by statements from principals, teachers, pupils, and their parents.

THE EFFECT OF RADIO MUSICAL ACCOMPANIMENT ON ACCOMPLISHMENT IN SCHOOL WORK

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Many parents are baffled by two problems in the relationship of their children to radio programs. One is the listening to inappropriate or over-exciting programs; the other, the child's desire to tune in on musical programs during the preparation of "homework."

The two problems are rather distinct, since a child ordinarily gives the dramatic or exciting program his full attention with no pretense of working. The interference with his work comes from scattering attention between alternate short periods of work and listening.

The data given here have bearing on the second problem, that of doing work to the accompaniment of instrumental musical programs. Theoretically, parents seem to stand together in thinking it better to have the radio "off." Practically, their ideas seem to be disregarded by children, since 80 per cent of a group of 140 fourth, fifth, and sixth grade children say they are accustomed to doing reading and arithmetic work at home accompanied by radio music. Their *preference* about how they work at home is shown below:

Opinions About Having Radio On for Work

	Yes	*No*	*No difference*
Would rather read with music	62%	12%	26%
Would rather do arithmetic with music	41%	30%	28%

Homework, at least for children below high school, has its primary value in developing responsibility in carrying out an individual task alone. If the elementary school is doing its work well, additional

work at home is not needed to accomplish the school program. With our present procedure in secondary education, however, it seems wise for a child to enter high school with the habit effectively developed of carrying out home tasks. The anxiety of the conscientious parent, then, is that the radio accompaniment may be interfering with the correct formation of the home work habit; that it will interfere with concentration on work.

We carried out an experiment giving children similar tests with and without music to see whether music interfered to a degree which could be measured. Similar forms of standardized tests in reading, arithmetic, and intelligence were used with two classes of fourth, two of fifth, and four of sixth grade children. These tests were given once under normal testing conditions, and again accompanied by victrola record music played from a central control room through the room radios. The records, which were light jazz, were played continuously except for pauses necessary for changing them. The practice effect of the first test, and the possibility of different ease in forms of the tests were rotated out.

Scores for all tests taken silently were thrown together, and for all taken with music. There was practically no difference in the results, as will be seen in Table I.

These results are surprisingly close and seem to indicate that the children worked as well with music as they did under normal silent conditions. However, the emotional effect of a procedure on children is very important and difficult to measure. Each test was twenty minutes long, so there was a total of an hour of working to music. This was divided between morning and afternoon; therefore there was no long period of strain. When asked about the difficulty of taking tests with music, 32 per cent of the pupils thought it harder, 41 per cent thought it easier, and 27 per cent saw no difference. Many children made spontaneous comments as the tests ended, some for and some against music:

TABLE I

Arithmetic—Grade Scores	N = 142
Silent	*Music*
M = 5.81	M = 5.82
σ = 1.57	σ = 1.59
Intelligence—Raw Scores	**N = 141**
Silent	*Music*
M = 35.6	M = 35.2
σ = 13.3	σ = 13.5
Reading—Grade Scores	**N = 142**
Silent	*Music*
M = 7.35	M = 7.27
σ = 2.5	σ = 2.6

I like to listen and sort of like to write with music. When you get stuck it sort of tells you over the radio.

I never listen only when I'm writing a letter, then I like music but no program.

I wish we could have it on for all our tests. I can do so much better. I got every one of my arithmetic problems right.

It pepped me up to work better.

I could do better work if I had music all the time.

It's mean to have the radio on when we couldn't stop to enjoy it, and now when we're through we have to have it off.

Gosh! Do we have to have that radio on today? I wish I had brought some cotton.

The music mixes me up.

Something good comes on and I have to stop and listen.

I can do it when they have music, but when they start talking it gets me mixed up. I write what they say.

When you have to carry in arithmetic, it mixes you up.

When there's a piece I like I always listen. I never go on reading my book.

I carry with my fingers.

Every now and then at home my sister puts the radio on and it's turned to something I like and I forget my numbers and have to do the problem over. When you begin listening, it goes on and on to one you like and then it's time to go to bed and your work isn't done. You have to do it in the morning.

Observers in the room watched and noted the children's physical reactions during the testing. When music started with the first test, these were very marked. A great many children beat time with their feet or with pencils, many wiggled, and many put their hands over their ears. Some kept time with mouth, several twisted their hair or chewed gum vigorously. There was some tendency to whistle softly or to hum.

There was much lip movement in reading and many children counted on their fingers to get arithmetic combinations. Some children talked to themselves in undertones in getting answers. Several children who ordinarily check work carefully sat dreamily when they had finished or stood up and stretched but didn't go back to work. Some children showed a noticeable difference in tension when a quieter record came on. The children became much quieter as the testing proceeded, and except for tapping with feet paid no attention to the music when the third test was reached. However, in several instances teachers reported an unusual tenseness and noisiness during the next period of classroom work following the periods with music.

SUMMARY OF THE STUDY

1. There was no significant difference in results of tests taken normally and those accompanied by jazz instrumental music.

2. There was a marked restlessness and physical movement among children during the first of the testing with music. This decreased as they became accustomed to the music.

3. The children were more restless in the periods following the testing with music than following normal testing.

4. About a third of the children thought it harder to work with music, 40 per cent thought it easier, and the rest were indifferent.

5. About 60 per cent of the children *prefer* to read at home with music and about 40 per cent *prefer* to do arithmetic at home with music; while 80 per cent say they have the radio on at home while they are working.

6. Many children said talking in a program disturbed them.

7. There was no measurable advantage in musical accompaniment, therefore there seems to be no reason to encourage the use of radio.

8. There was a decided increase with music of such negative habits as lip reading, audible reading, and counting on fingers in arithmetic.

9. Musical accompaniment doesn't seem to have as detrimental an effect on work as many parents fear. Therefore, its presence should probably depend on the judgment of the parent as to the reactions of the individual child.

THE CLEARING HOUSE

WHAT MATERIALS ARE MOST USEFUL TO CHILDREN IN LEARNING TO SOLVE PROBLEMS?[1]

Three applications of the Stone Reasoning Test city-wide in Cleveland showed achievement at exactly the same level each time. This was in December, 1926, and May and December, 1927. During this period, the schools were emphasizing the traditional methods of learning to solve problems; that is, analysis, and checking by approximation, and by repetition and reversal of processes.

Beginning soon after the third administration of the Stone Test, Cleveland schools began to develop their own test material, utilizing the abilities of pupils as well as teachers in discovering real problems. These problems were distributed so as to illustrate all of the processes it was believed desirable for pupils to learn. More than 100,000 problems discovered and formulated by pupils in grades seven and eight were collected during the first semester.

When the new tests developed out of these problems were given, the old Stone tests were given along with them to see if anything of consequence had happened. Improvement of 15 per cent to 35 per cent, approximately, was noted.

First conclusion. The best material for use in teaching problem-solving in arithmetic, then, seems to be problems selected by pupils themselves from their environment to illustrate the processes they are expected to learn to use in problem-solving.

On the whole, the schools which had participated most fully in the collection of problems gained more and stood higher than other schools. However, there were a few exceptionally good schools which did not participate as fully in the problem-collecting activity as some of the others.

Examination of the methods and materials used in these exceptional schools indicated that "dynamic problems" invented by teachers and principals were used freely to help children over difficulties with more inert material.

During the next year, the use of dynamic or dramatic problem material, in addition to problem materials collected by children, made it possible for seventh and eighth grades city-wide in Cleveland to reach the old Stone standards of 1910-14. This occurred in the spring of 1929.

Second conclusion. The use of dynamic problem material created by teachers to help pupils over difficulties with more inert problems adds considerably to the problem-solving ability of pupils using primarily materials collected from their own experience to illustrate the processes they are supposed to learn.

Nothing said here should be construed to mean that problem analysis, and checking by means of approximation, and by repetition and reversal of processes are useless devices. Rather, it should be construed to mean that the use of additional materials of the character described adds to the efficiency of teaching and learning.

A bit of philosophical speculation. The findings of this study seem to agree rather closely with the notion of learning as the progressive organization and reorganization of ideas under the stimulus of a dynamic environment, which theory is in "Gestalt Theorie," as supplemented by studies

[1] Statement before American Educational Research Association, National Education Association, Minneapolis, Minnesota, March 1, 1933.

in localization such as Lashley's. At least, these findings seem to agree more closely with such a theory of learning than they do with the widely accepted laws of learning put forward by Thorndike in 1913-14. Perhaps it would be fairer, and perhaps clearer, to say that the findings seem to agree more closely with what Thorndike has since called the significance of "belonging" and of "impressiveness" in learning than they do with his older theories of learning.

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THE MARIONETTE COMES TO THE CLASSROOM—A UNIT OF WORK IN SOCIAL SCIENCE

Those of us who are fortunate enough to be working with a group that is held together by a common interest will find an opportunity to encourage self-expression and creation of a higher type. With interest as the guiding impulse, a seventh grade was directed into the channels of a marionette activity through the formation of a class club which became known as the "Live Wires."

The first meeting of the "Live Wires" brought forth the aims and a class insignia. An illustration taken from a current magazine inspired the poster. The picture represented an elderly gentleman playing with two puppets. This was arranged on an oak-tag card with the name of the club printed in manuscript. Directly beneath the playing puppets were printed the aims of the club:

To promote a spirit of coöperation
To further an interest in our school work
To sponsor a marionette show

Thus a common interest, a bond of sympathetic issue, was formulated and we were off on an adventure into the realms of social science. Our classroom took on the essence of a laboratory, wherein knowledge was being stored for actual use. Our lessons became the experiments and every step was important. A fund of information must be established from which we might select.

An Introduction to American Civilization, by Harold Rugg, was the book used in the social science work. As each unit of work was studied, the children realized that the change and growth of the standards of our American civilization were the theme of the work. Our play must portray this. The second meeting of the club solved the problem. It was decided that an introduction would be necessary. After many means of introduction had been discussed, the group decided to have a prologue. When a committee was appointed to write the prologue, the class immediately recognized, as an outcome of this discussion, that it was necessary to have committees for the different problems as they might present themselves. Such committees as puppet making, costumes, stage, scenery, advertising, properties, lighting, and playwriting were formulated.

The children, with a consciousness of what they thought they could do best, expressed in a simple way their capabilities, and these gave opportunity for creative expression and development. The pupils recorded these expressions of special aptitudes, and thus were able to broaden their vision of what this marionette show would entail. In many cases more than one task claimed an equal interest. The pupils were eager to contribute abundant suggestions as well as actual participation. Not only did Sylvia express a desire to help write the play but she also wished to dress the puppets. Bernard, who at first was interested only in the position of "General Director," soon found himself chairman of the class playwriting committee. His work was the result of a great interest expressed in his

own manner. Henry, who said, "I should like to work on the playwriting committee, but I can't," not only surprised his classmates but proved to himself that he could work on the playwriting committee. His suggestions and contributions were considered very valuable and in many cases used in the play. Henry was happy, indeed, to find out that he could possibly write a play.

The exclamation of delight and the note of approval voiced at the first reading of the prologue encouraged the teacher to go on and inspired the children with zest and the endeavor to get "down-to-work."

After the plans for the stage had been discussed by the committee and teacher, the principal was taken into our confidence and he granted us the use of the workshop. The stage was to be a permanent one and, after much deliberation, the committee decided to build one out of a large plumber's packing case. The box itself was to be the stage floor and a frame was built about it so that it could be screwed in position when in use and unscrewed when not in use. This was considered a very fine feature of the stage, since the stage could be put away without taking up too much room.

Articles of every description started coming in with the thought in mind, on the part of us all, that we might need these things some time. A beautiful piece of silk cloth which was brought in became, at once, our curtains. Large mattress packing cases became stage wings, which would hide the puppeteers from the audience. Unbleached muslin and heavy sateen were brought in by the purchasing committee with money collected by the class treasurer in monthly dues. The muslin was used to make the bodies of the puppets, which were stuffed with hair-stuffing brought in by Mary. Cigar boxes brought in by Edward from his father's shop would be used in the making of the several pieces of furniture to be used on the stage. How rapidly this was becoming a coöperative unit whereby each and everyone was an integral part, became more and more apparent as we progressed with our plans from day to day.

There were coats to be sewed and many other articles of clothing were to be made for the Red Cross in the girls' sewing class, but every spare moment was used in sewing for our marionette show. The dolls had to be sewed and stuffed; the costumes, which had been designed by a committee so that they would be historically correct, were cut and sewed. Running stitches, hemming stitches, and basting stitches flew along, guided by quick fingers anxious to complete their task for the puppet show. The boys enthusiastically awaited the arrival of the first completed costume for Mr. Wilton, one of the characters in the play, and were very pleased with it.

The pupils were permitted to go to the art room so that they might devote time to designing and painting the scenery. From time to time they brought their work in to be approved by the class. The first scene, which was to take place in the latter part of the eighteenth century, was laid in the living-room of Mr. Wilton's home. The authenticity with which this was done immediately transported all of us to that very home. Books and picture references were consulted and formed the basic element of the necessary information gathered.

The art committee planned the program covers and made the linoleum block. The printing of the block was done and the covers were ready to hold the programs, which were planned by another group and taken to the printing department where the type was set and the printing done. Very interesting as well as unique invitations were made and painted.

The writing of the play became vital and necessary, for were we not to use it for our very own marionettes? In our theme work

evidence of joy and delight was displayed when the young actors wrote about the experiences of their characters in the puppet show. In our oral English work one-minute talks were prepared which would explain all the different issues involved in the making of our play and marionette show. Every child had the desire to tell about his experience and how it helped to make the marionette show.

Throughout this entire unit it was manifest that we were becoming better speakers, better writers, and better thinkers. We were able to say what we had to say in an intelligent manner, so that our listeners would understand us and know what we were saying. We were able to write our thoughts in complete sentences which embodied the use of expressive words, vivid pictures, and finer sentence structure. We stressed the fact that our work should be worthy of the time spent upon it. These accomplishments we tried to attain.

The opportunity for correlation and integrated subject matter brought about a closer relationship between the several departments and established that sense of responsibility which comes from working with different groups having the same interests. Definite aims were apparent and the work carried over that intrinsic interest so essential to the learning process. The work accomplished in the art department was dependent upon the work done in the woodwork shop, which in turn depended upon the work done in the English and social science classes. This complete cycle of coöperation brought about a more creative expression of each individual within the group and gave to the "Live Wires" a marionette show worthy of their efforts.

FANNIE H. SILVERMAN,
Passaic, N. J.

CREATIVE POETRY—MOTHER'S DAY[1]

Six weeks before Mother's Day we studied and read many poems and had several lessons on appreciation according to Hayward. It was decided upon at that time that the class of 45 children wanted to write poems for Mother's Day. Mention was made at times about these poems. During the week before Mother's Day, several English class periods were devoted to writing poems, and time was spent discussing the meaning of the day. First these poems were written with manuscript writing, as that is the penmanship used in the sixth grade; these copies were given to me. Then cards, 5″ x 8″, were obtained from the printing office and the children wrote these in manuscript writing for their mothers. Since the sixth grade children are able to type, they typed a copy for the Superintendent of the Training School. In this way we integrated English, typewriting and penmanship.

Here are two[2] of the poems:

MOTHER'S DAY

Because we love you, Mother dear,
We set aside a day each year
To shower you with gifts of cheer.
For this our Mother's Day,
We chose the merry month of May,
When bees and birds and flowers
Come to fill this day
With long and happy hours.
Thus Mother Nature joins us too
In showing our respect to you.

MY MOTHER'S EYES

My mother's eyes so soft and blue,
As if touched by the morning's dew.
They are always shiny and bright,
Even when I kiss her
To go to bed at night.
My mother's eyes so soft and blue
Smile when they look down at you.

[1] This creative poetry unit was carried out in the sixth grade, Training School, State Normal School, Cheney, Washington, by Charlotte C. Lang, training teacher; Clark M. Frasier, Director of Training.
[2] If space permits, we shall publish more of these poems in our next issue.—Ed.

EDITORIAL COMMENT AND REPORT

SUPERINTENDENCE IN CONFERENCE

At their annual convention in Cleveland, the superintendents of schools substituted talking for listening. Much of the time heretofore devoted to the reading of formal papers, falsely called "addresses," was given to group discussions. Seven General Subject Committees arranged two half-day programs for the consideration of topics and these in turn were parceled out to sub-committees selected to present their ideas on sub-topics. Members not assigned to committees were distributed among the groups as "panels" for discussion. The general subjects included "Education for the New America," "Public Education and National Welfare," "Some National Problems in Education," "A Comprehensive Program of Public Education," and "A National Outlook on Education."

This is an interesting and possibly significant development. At one time national gatherings of educators were small, informal discussion was freely indulged in, and the clash of mind with mind highly stimulating. Until recently, this plan of national convention activity has long been conspicuous by its absence. Even the National Council, whose express purpose is to provide for discussion, had degenerated into another section for the reading of papers. The revival of conference is timely. The country is facing new conditions and difficult questions of public policy. An aroused and informed public opinion is imperatively called for, but we have no adequate means of securing it.

Perhaps the superintendents will enjoy their conferences so much that they will resolve to organize neighborhood councils on a grand scale. Non-partisan association of householders is the only means that appears capable of rescuing us from the bog into which our two-party system has led us. This is particularly true of municipal and other local affairs. The sixty-fourth annual convention of the Department of Superintendence may turn out to be the beginning of an epoch.

NOW IT CAN BE TOLD

To one who recalls the fanatical patriotism of one-hundred-per-cent Americans during the years following the World War and even until the Depression set in, the freedom of speech now permitted is almost incredible. Then everyone was expected to subscribe wholeheartedly to the ideals of the Founders—as understood by self-appointed guardians of our "liberties"—and to seek to maintain the American system. "My country, may she ever be in the right, but my country, right or wrong!"

For the time being, most of the hundred-percenters are holding their peace. They hear from every platform and read in every magazine that times have changed; that some adjustments are now in order. And having suffered economically, like the rest of their countrymen, and being badly scared for fear the old Ship of State would actually strike a rock and go to the bottom, they think it wise to listen rather than to protest. When good times come again it will be different, but now the upholders of the established order are chastened and amenable.

Under these circumstances education should make headway. As Dewey made clear in his Minneapolis address, the causes of stringency in school budgets are the

same as those which have produced the paradox of millions hungry and cold in the midst of plenty.[1] In fighting to save the schools, it is necessary to attack the social injustice and reign of special privilege that are the ultimate cause of our economic ills. This means calling a spade a spade. Never before have teachers been so free from interference in teaching the truth as they see it. Given a reasonable amount of common sense and discretion, we may now look forward to some years in which pupils will be allowed to see both sides of controversial questions and become accustomed to the idea that even the greatest government on earth can be improved. In that case the Great Slump will not have been an unmixed evil. J. F. H.

THE ANNUAL MEETING OF THE DEPARTMENT OF SUPERVISORS AND DIRECTORS OF INSTRUCTION AT CLEVELAND

The fourteenth annual meeting of this Department comprised two general sessions and a Tuesday luncheon, as in other years. The Board of Directors met at breakfast on Monday and the Membership Committee on Tuesday. At the two general sessions the attendance was in the aggregate considerably larger than at Minneapolis. So many members dropped in for the Monday breakfast that a general invitation will be extended next year.

The theme of the first general session was the same as that of the current—seventh—yearbook, "The Use of Scientific Method in Supervisory Programs," but only the last two of the five papers read related to the yearbook. Miss Goodykoontz, speaking on "Scientific Method and Creative Supervision," took the position that truly scientific work is creative, and gave examples from nation-wide observation. Miss Hall, in her paper on "Scientific Method and Coöperative Supervision," gave an account of some twelve achievements in the Minneapolis schools. Professor Brownell brought out forcibly the limitations of "Objective Measures in Evaluating Instruction." "The more objective the measure," he declared, "the more superficial and unimportant it is." His analysis of the falsity of conclusions frequently drawn from classroom tests was striking. Professor Rankin explained the purpose and plan of the yearbook and summed up each of the nine chapters. Professor Woody supplied the critical approach to a proper appreciation of the book.

The theme of the second general session was "The Redirection of the Educational Program to Meet the Needs of the Present Crisis." Commissioner Butterfield of Connecticut dealt with "The Type of Instruction Demanded." His paper was humorous and highly stimulating. He showed by concrete instances how times have changed, and outlined a five-point educational program to meet them. Miss Zirbes pressed home "The Challenge of the Present Crisis for a New Type of Supervision." Professor Melchior showed how "Self-Supervision by Teachers" may be made to help meet the need. He made an interesting reference to certain experiences in South America. Finally, Superintendent Oberholtzer, President-elect of the Department of Superintendence, distinguished "Wise and Unwise Economies in a Program of Supervision."

At the business meeting following the general session on Wednesday, five members were elected to the Board of Directors for a term of three years, namely, Miss Mary Browning of Louisville, Kentucky, Miss Elizabeth Hall of Minneapolis, Minnesota, Miss Elma Neal of San Antonio,

[1] Dewey, John, "Education and Our Present Social Problems," *Educational Method*, 12:385-290 (April, 1933).

Texas, Dr. Paul T. Rankin of Detroit, Michigan, and Mr. Franklin M. Underwood, of St. Louis, Missouri.

THE BOARD OF DIRECTORS

At the meeting of the Board of Directors on Monday, February 26, the following were present: directors-at-large English, Hahn, Hall, Horn, Hosic, Kibbe, and Neal; also director Power of Oklahoma and Miss Mary E. O'Connor, of Natick, Massachusetts, proxy for director Piper from that state. The minutes of the Minneapolis meeting as printed in *Educational Method* for April, 1933, were approved. The financial report, including a comparative statement for 1932-1933, 1933-1934, and a forecast for 1934-1935, was accepted; likewise a report of the Auditing Committee, composed of Dr. J. Cayce Morrison (chairman), Mr. Sim J. Smith, and Mr. Lawrence S. Chase. This committee met in New York, November 24, 1933, and examined the financial accounts of the Secretary-Treasurer, checking them against his financial report for the year July 1, 1932, to June 30, 1933. The committee found this report correct as rendered. It also inquired into the system of auditing in use in relation to the Teachers College Bureau of Publications, publishing agent for the Department. Finally, the committee recommended the separation of checking account and savings account as items under "Cash in Bank," and also that the budget should show comparisons of each item with the corresponding item for each of the two preceding years.

The Board directed the appointment of an auditing committee for the ensuing year and requested that recommendations as to financial policy be included in its report.

A single half-day session of the Department was ordered for the summer meeting in Washington. This will be in charge of Mr. Leonard Power, the first vice-president.

The work of the Membership Committee, under the leadership of Miss Maybell G. Bush, was commended. It was agreed that the organization of state affiliates should be encouraged.

The possibility of issuing certain numbers of *Educational Method* as double numbers devoted largely to special subjects was discussed without formal action. This matter will be acted upon by the Executive Committee.

The report of the nominating committee, Miss Neal (chairman), Miss Hahn, and Mr. Power, proposed the following: for President, Dr. Paul T. Rankin of Detroit, Michigan; First Vice-President, Mr. Leonard Power of Tulsa, Oklahoma; Second Vice-President, Miss Helen J. Piper of Lynn, Massachusetts; Member of Executive Committee to succeed Miss Hall, Miss Mildred English of Raleigh, North Carolina.

JAMES F. HOSIC,
Secretary-Treasurer.

Following is the complete list of officers and directors, with the year in which the term of each expires:

OFFICERS AND DIRECTORS, 1934-1935

President, Paul T. Rankin, Supervising Director, Department of Instruction, Detroit, Mich. 1935

First Vice-President, Leonard Power, Assistant Superintendent of Schools, Tulsa, Okla. 1935

Second Vice-President, Helen J. Piper, Supervisor of Grades, 4, 5, and 6, Lynn, Mass. 1935

Secretary-Treasurer, James F. Hosic, Professor of Education, Teachers College, Columbia University, New York, N. Y. 1936

Executive Committee

The officers of the Department, *ex officio*

Mildred English, Assistant Superintendent of Schools, Raleigh, N. C. 1937

Ernest Horn, Professor of Education, State University of Iowa, Iowa City, Ia. 1936

J. Cayce Morrison, Assistant Commissioner for Elementary Education, State Department of Education, Albany, N. Y. 1935

Board of Directors

Mary Browning, Supervisor of Early Elementary Education, Louisville, Ky. 1937

Dessalee R. Dudley, Assistant Superintendent of Schools, Battle Creek, Mich. 1935

Mildred English, Assistant Superintendent of Schools, Raleigh, N. C. 1935

Armand Gerson, Associate Superintendent of Schools, Philadelphia, Pa. 1936

Julia L. Hahn, Supervising Principal, Third Division, Washington, D. C. 1935

Elizabeth Hall, Assistant Superintendent of Schools, Minneapolis, Minn. 1937

Ernest Horn, Professor of Education, State University of Iowa, Iowa City, Ia. 1936

James F. Hosic, Professor of Education, Teachers College, Columbia University, New York, N. Y. 1935

Delia Kibbe, State Supervisor of Elementary Schools, Madison, Wis. 1936

Robert H. Lane, Assistant Superintendent of Schools, Los Angeles, Cal. 1936

Rudolph D. Lindquist, Director of University School, Ohio State University, Columbus, Ohio 1936

J. Cayce Morrison, Assistant Commissioner for Elementary Education, State Education Department, Albany, N. Y. 1935

Elma A. Neal, First Assistant Superintendent of Schools, San Antonio, Texas 1937

Helen J. Piper, Supervisor of Grades 4, 5, and 6, Lynn, Mass. 1935

Leonard Power, Assistant Superintendent of Schools, Tulsa, Okla. 1935

Paul T. Rankin, Supervising Director of Instruction, Detroit, Mich. 1937

John A. Spargo, Assistant Commissioner of Education, State Department of Public Instruction, Trenton, N. J. 1935

Franklin M. Underwood, Assistant Superintendent of Schools, St. Louis, Mo. 1937

ACTIVITIES OF CURRICULUM SPECIALISTS

The February bulletin of the Society for Curriculum Study contains a section devoted to listing elementary textbooks published from 1931 to 1933 inclusive. The list is arranged by subjects, sixteen in all, and is supplied with descriptive annotations. It was compiled by a special committee made up of C. H. Woodruff of Long Beach and J. L. Merriam and M. E. Herriott of Los Angeles. The last named was chairman.

Other features of the bulletin are a synopsis of the curriculum of Horace Mann School of Teachers College and a series of comments on Professor Bobbitt's "Summary Theory of the Curriculum"; also a proposal for a state curriculum program for Texas.

CHILD HEALTH DAY

The tenth anniversary of National Child Health Day will be celebrated May first. The object is to strengthen the spirit of coöperation for child health in the community. Whenever possible, the assistance of state officers will be secured in making arrangements for state-wide observance. Correspondence should be addressed to the American Child Health Association, 450 Seventh Avenue, New York City.

GENERAL SUPERVISORS OF PUBLIC EDUCATION OF MASSACHUSETTS

Miss Helen J. Piper, Supervisor of Grades 4, 5, and 6 of Lynn, Massachusetts, was hostess to the General Supervisors Association at an all-day meeting January 19, 1934. Both eastern and western Massachusetts were represented among the twenty-two supervisors present.

The morning was spent in visiting elementary classrooms, where activities in social studies, reading, physical education,

special classes for health, English, and hard-of-hearing pupils were seen. The entire Lynn supervisory staff, headed by Superintendent Harvey S. Gruver, accompanied the visitors, helping to make the morning a profitable as well as a pleasant one.

After a luncheon served at the English High School to forty persons engaged in supervision, there followed an inspection of the splendid new building, and a conference in the Little Theatre. Superintendent Gruver was the guest speaker, his subject being "The Coördination of Supervisory Agencies."

He challenged the supervisors to produce educational leadership which will guide teachers to prepare children for a new life; to sponsor that kind of education which is a response to life; and to keep our educational proceedings in the right direction. He pointed out that as yet the possibilities of leadership are untouched; that in the coming years more and more will there be specialization in guidance. Unity will come not through identical thinking but rather through discussions among supervisors, which will result in the formation of better policies. Consequently the procedure will then be not the idea of one person, but the conclusion of several. Schools must try to anticipate the needs of the future. New means, new opportunities must be provided. Pupils must have a chance to think and to see for themselves what life is like. Experiment must hold a part in the classroom, for new methods, new curriculum, new philosophy cannot be thought out, but must rather be tried out in school situations. The supervisor should have a definite vision of what the school of the future in her own community shall be, and she must try to put that dream into practice. Results must be compared, talked over with other supervisors, and through coöperation with the teachers' colleges an active program must be undertaken. There will result a coöperative enterprise in exploring the frontiers for the profit of the entire group.

A discussion of "Supervision as the Supervisor Sees It," led by Miss Marion E. Remon, brought out the point that that educational leadership is most effective which inspires individual growth in pupils. Ways of producing greater pupil happiness, broader growth, and more effective self-direction are secured through allowing freedom of teachers in collective thinking, through coöperative work, and through expression of opinion. The opportunity given to teachers for growth should reflect growth in the lives of the children themselves.

The noteworthy outcomes of the meetings of the day were: the inspiration which each supervisor must have taken home; a recognition that a coördinating influence and a coöperative tone pervaded the discussions of the day; and, finally, an appreciation of the forward-looking leadership in Lynn under the direction of Superintendent Gruver.

MARION E. REMON.

RADIO EDUCATION INSTITUTE

The Fifth Annual Institute for Education by Radio will be held at Ohio University, Columbus, Ohio, April 30-May 2, inclusive, under the general chairmanship of Dr. W. W. Charters. Among the speakers will be H. V. Kaltenborn, news commentator and political analyst, and Frederic A. Willis, Educational Director, Columbia Broadcasting System; Miss Judith C. Waller, Educational Director, Central Division, National Broadcasting Company; and C. A. Siepmann, Director of Talks, British Broadcasting Corporation. Round table discussions are scheduled for the two evening meetings.

THE READER'S GUIDE

ON TEACHING ENGLISH COMPOSITION

To call a book on teaching composition *On Teaching English*[1] is to increase rather than to clear up the confusion that exists. However, since agreement as to educational terminology is apparently far in the future, it is to be expected that each writer will exhibit his own preference. Professor Seely does this in setting forth the conclusions to which his own experience has led him. Before joining the staff of Ohio State University he taught in Scarborough and John Burroughs schools, and it is upon this work that he bases his theories.

After brief introductory comments, he comes at once to "fundamentals," that is, grammar, punctuation, capitalization, penmanship, spelling, vocabulary, sentence, and paragraph. Grammar is to be introduced as soon as the pupil wishes to know why one usage is preferred to another. Just how far our author is committed to the view that certain usages are right and others wrong in an organic or logical sense rather than merely because custom has or has not established them is not, to this reviewer at least, as clear as it might be. At any rate, in putting matters of usage to the fore, he is in harmony with actual high school practice as shown by the Smith report. Whether that practice is to be commended is debatable. College preparatory schools appear to be favorable to it; other schools vary.

The second and third sections in this book are concerned with oral composition and written composition respectively. The latter closes with examples of pupils' writing, and this portion will be the first to be examined by many readers. They are literary or "creative" and reflect the same sort of intellectual background as the collections of prose and verse which the Lincoln School has published.

As a whole, this is a personal record. The writer makes no pretense of surveying conditions in general or of reporting the results of scientific investigations in the schools of education. In a pleasant though somewhat discursive way, he tells us what he believes and we may accept or reject his advice as we think best. This is fair enough. Indeed, it is a grateful relief from the "Jones says this" and "Brown says that" type of educational rehash, of which there has been an oversupply for some time.

THE DEVELOPMENT OF ATTITUDES

The Chicago Association for Child Study and Parent Education has added another useful book to the series begun with *Intelligent Parenthood* in 1926. Like its predecessors, the new volume, *Developing Attitudes in Children*,[2] is the report of a biennial convention of the Society. It contains three addresses and several shorter contributions made in the round tables that were held.

The weightiest utterance in this symposium is by President Frank, of the University of Wisconsin, on "The Conflict Between Scholarizing and Socializing the Student." Here we have a drastic criticism of the current system of college teaching by research specialists. "The unpardonable sin of Western leadership,"

[1] *On Teaching English.* By Howard F. Seely. American Book Company, 1933.
[2] *Developing Attitudes in Children.* Proceedings of the Chicago Association for Child Study and Parent Education. University of Chicago Press, 1933.

said the speaker, "the wages of which may yet be the death of Western civilization, was committed when Western education was permitted to become a series of relatively unrelated specialisms, instead of its being made to center around, or at least come to climax in a coherently planned attack upon the problem of creating, comprehending, and controlling the civilization in which Western man must live his life and pursue his varied enterprises." That indictment is valid also of the high school and of the elementary school as well. The school has been a place to study subjects and not a place to learn how to live. College graduates unable to control their itching palms provide eloquent testimony that the system is a failure and should be supplemented without delay.

Dr. Hartshorne considers various current procedures for developing ethical attitudes and decides in favor of the project method. Other valuable studies are Miss Peterson's on "The Effect of Motion Pictures on the Social Attitudes of Children" and Mr. Washburne's "Training for Citizenship." The book as a whole is a highly stimulating treatment of important issues heretofore too much neglected in educational writing.

THE RADIO AS AN EDUCATIONAL AGENCY

Publications dealing with the radio in education fall mainly into two groups, yearbooks and reports of research. Two national societies hold annual meetings and publish their proceedings. The Institute for Education by Radio meets at Ohio State University and publishes through that institution. Its latest yearbook is the fourth.[3] The third annual convention of the National Advisory Council on Radio in Education was held in New York City, and the proceedings[4] were published by the University of Chicago. Such well-known figures as Professor Charters and Mr. Levering Tyson appear in both. The former is perhaps the most prominent investigator in this field. The latter is the paid director of the National Advisory Council.

To the innocent bystander the activities of these two groups appear to be intended to solve essentially the same problems. They doubtless represent somewhat different interests. In one case the approach is from the studio, in the other, from the school. If common purposes can be worked out and genuine coöperation attained, we shall have the first example in this country of really effective teamwork of nation-wide scope on the part of major educational agencies.

The ordinary student of education will find much of interest and value in both yearbooks. That of the Institute contains more bearing on the work of the schools themselves. Both reports should be found in libraries so as to be generally accessible.

Probably the miscellaneous publications sponsored by the Council will be still more valuable. Robert Lingel, for example, has compiled an extensive bibliography on educational broadcasting.[5] This runs to over 150 pages, is thoroughly indexed, and therefore provides a very useful reference.

The most authoritative study on the adaptation of the moving picture to the work of education is that by Colonel Frederick L. Devereux,[6] Vice-President of Erpi

[3] *Education on the Air.* Fourth Yearbook, Institute for Education by Radio. Edited by Josephine H. MacLatchy. Ohio State University, 1933.

[4] *Radio and Education.* Proceedings of the Third Annual Assembly of the National Advisory Council on Radio in Education. Edited by Levering Tyson. University of Chicago Press, 1933.

[5] *Educational Broadcasting—A Bibliography.* By Robert Lingel. University of Chicago Press, 1932.

[6] *The Educational Talking Picture.* By Frederick L. Devereux. In collaboration with Nickolaus L. Engelhardt, Paul R. Mort, A. J. Stoddard, and others. University of Chicago Press, 1933.

Picture Consultants, Inc., in collaboration with Professors Engelhardt and Mort of Teachers College, Columbia University, Superintendent Stoddard of Providence, Rhode Island, and members of the Erpi staff. The foreword by President Hutchins, of the University of Chicago, characterizes this work as follows:

> In these pages Colonel Devereux and his colleagues have analyzed all phases of educational talking-picture production. They begin with the selection of the educational materials and continue through the definition of the unit of instruction and the refinement of standards on the mechanical as well as on the educational side. They conclude with an account of the methods that have been employed in measuring the success of the pictures in actual classroom use.

This statement gives a good idea of the book. The unit of instruction is first defined and then illustrated with outlines of actual units prepared for schools on such subjects as "Transportation" and "Flowers: Parts and Functions." The process of translating instructional materials into talking films is followed in detail. Standards of excellence and methods of appraisal are indicated, programs are laid out, and building requirements specified. Finally, types of equipment available are described.

This study has been carefully followed through. There is no evidence of yielding to the natural desire to make out a good case. The limitations as well as the possibilities of the motion picture are set forth and the conditions of success are definitely laid down. Colonel Devereux and his associates have produced a scientific monograph of the best type. It is needed in a field still very new and will beyond doubt prove a sound guide where guidance is much needed.

FIRST BOOKS IN EDUCATION

The survey or general introductory course in education appears to have established itself, at least in colleges. One new text and two revisions of texts intended for this purpose are at hand. Frasier and Armentrout[7] were among the first to write a general introduction to education. Their volume is now in its third edition. The authors have besides prepared a volume of readings to accompany the text. This appeared in 1931 and was reviewed in these columns.

The chief topics dealt with are: "The Teacher," "The Child," "The Teaching Process," "The American Public School," and "Education as a Life Work." Regarded as an aid to mapping out two or more years of professional study, such a book is undoubtedly of great value. Probably the student will feel, as did the reviewer when he took a three-day Cook's tour of Paris, that he has learned what there is to see. He would now go leisurely about the pleasant occupation of seeing it. The pictures of notables scattered through the book may, I suppose, be thought of as great architectural monuments, like Notre Dame or Les Invalides.

Cubberley, revised by Eells,[8] is intended for more mature students. It includes chapters on various administrative matters, such as "Scientific School Classification" and "The School Plant." Principals and superintendents rather than teachers seem to have been aimed at. The references are mainly such as would be found in an ordinary professional library, not merely in the large universities. As in all of Cubberley's work, the historical background is prominent. Because of the wide range of topics touched upon, this volume is a good reference in any library of education.

[7] *An Introduction to Education* (Third edition). By George W. Frasier and Winfield D. Armentrout. Scott, Foresman and Company, 1933.

[8] *An Introduction to the Study of Education.* By Ellwood P. Cubberley. Revised by Walter C. Eells. Houghton Mifflin Company, 1933.

Messrs. Butterweck and Seegers[9] have made a departure from the methods followed by those already in this field. For one thing they have adopted the Morrison technique of unit instruction. Thus they have stated some twenty "problems," grouped under such headings as "How the School of Today Came to Be," "Unrealized Ideals of the School of Tomorrow," and "The Scientific Method in Education." Toward the end of the book we come upon the familiar "Guiding the Learner" and "The Teacher." From this it will be seen that what Frasier and Armentrout place first, Butterweck and Seegers place last. Cubberley and Eells come to this in Chapter VII, with sixteen chapters to follow. Like the first line of Gray's "Elegy," this theme lends itself to many permutations. Since the instructor owes it to himself as well as to the students to preserve freshness by variety of attack, the multiplication of books of this sort, variously arranged, is all to the good. Probably each of them is better adapted to the situation out of which it has grown than it ever can be to any other.

SIGNIFICANT ARTICLES

THE COST OF EDUCATION IN ENGLAND

The new president of the English section of the New Education Fellowship, Professor R. H. Tawney, in his inaugural address analyzed the proposals of the Rentoul Economy Committee, which seeks to reduce the cost of education in England. From the report of the address in *The New Era* for February, we learn that he showed how small the increase in cost of education is as compared with that of war. Much of the expenditure for public health, moreover, would be avoided if proper provision were made for the health and health instruction of children. The benefits of education to the country cannot be measured statistically. The loss from parsimony would be incalculable. "The only basis of educational policy worthy of a civilized nation is one which accepts as its objective the completest possible educational quality."

AN EDUCATOR'S CREED

In *Teachers College Record* for February, Professor Edward H. Reisner makes his confession of faith. He found a formulation of his beliefs with regard to human society desirable both for himself and for his students, with whom he must discuss ways and means of civic education. His credo is made up of six articles:

1. I believe that the economic system should be so organized and operated as to provide the material means to a full and happy life for all.
2. I believe in democracy as the ultimate and best form of political government and in all that democracy implies for its complete and healthy operation.
3. I believe in the worth and the potentialities of human personality, without prejudice on account of race, color, nationality, or religion.
4. I believe that the strictly competitive form of political organization is only a stage in a process of political evolution which will eventuate in a condition of amity and mutual helpfulness among the peoples of the world.
5. I believe in a vastly expanded and improved program of education as the means for the reconstruction of human ability to order more wisely the common life and to participate more effectively in social functions.
6. I believe in the limitless capacity of the human race to improve.

"I need my social faith," says Reisner, "as an incentive to action . . . a necessary element of repose . . . support for the day's

[9] *An Orientation Course in Education.* By Joseph S. Butterweck and J. Conrad Seegers. Houghton Mifflin Company, 1933.

work . . . the source of sympathy for human failure and human weakness."

EVALUATING HUMAN BEHAVIOR

The *Educational Research Bulletin* of Ohio State University for January 17 presents a comprehensive plan for evaluating behavior, by Mr. Ralph W. Tyler. He contends that the values that might be obtained by various techniques are largely unrealized because they are isolated. There are four major problems involved: "defining the behavior to be evaluated, determining the situations in which it is expressed, developing a record of the behavior which takes place in these situations, and evaluating the recorded behavior." In order to study any particular sort of behavior, it must be considered in all of the sorts of situations in which it is normally expressed. This calls for a comprehensive definition of the behavior type and the use of a variety of means of measuring or evaluating it. The article brings out the implications of these principles.

SUPERVISION AN ESSENTIAL SERVICE

In the *Elementary School Journal* for February, Professor William S. Gray attempts to meet the current attacks on supervision as an accessory service. He presents evidence to show why it is needed and states certain principles of success. His evidence is drawn from the experience of a five-year experimental program of reading conducted with the aid of a subsidy from the Commonwealth Fund. In general the work that was being done in a school was found to be in direct relation to the competence and strength of the supervisory staff in charge. Progress was found to depend to a considerable extent on professional reading and study. Research was a distinct aid. Sufficient time for development must be allowed.

HANDWRITING AND THE ACTIVITY MOVEMENT

Professor Freeman, authority on handwriting, doesn't think so well of modern informal school work as an aid to learning to write. In *Sierra Educational News* for February, he challenges what he regards as the incidental method. He prefers system. Advocates of the activity program, he says, believe that it will yield results in the tool subjects that are good enough. The proposal to do away with systematic practice, however, is not a new one. It is time that we should learn what merits there are in the contentions of the parties to the controversy. For himself, he would keep a balance between practice for skill and activity that as experience shall be full of meaning.

EDUCATION IN THE NEW GERMANY

The effects of national socialist legislation on education in Germany are explained by John W. Taylor, of New College, in the latest issue of the *International Education Review*. Chief emphasis now falls on physical training. The practical rather than the merely theoretical is sought. The old Germanic culture is distinctly to the front. Individualism is frowned upon. Study tours through the Fatherland are frequent. The thirty million Germans living outside the present boundaries of the Reich are not forgotten. Opportunity for service through manual labor is freely provided. Teachers are now trained in nationalistic sentiments rather than in broad humanitarian ideals. New textbooks, particularly in history, are in use. In general education is being made to play its part toward a totalarian state.

THE NEW BOOKS

Elementary School Organization and Administration. By Henry J. Otto. New York: D. Appleton-Century Co., 1934. Pp. 652. $3.00.

Graded Objectives for Teaching Good American Speech. By Elizabeth A. Douris *et al.* New York: E. P. Dutton & Co., 1934. Pp. 90. $1.50.

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